TECHNOLOGY DEPT.

Telephone Engineer

AND MANAGEMENT

THE NATIONAL TELEPHONE MAGAZINE

PUBLIC LIBRARY
AUG 26 1957
DETROIT

August 15, 1957

★ **SMALL EXCHANGE TONICS**
By J. T. Naylor

★ **PLANNING PAYS OFF**
By T. DeWitt Talmage

★ **REVENUE BOOSTER**
"Roanoke Motel Story"

★ **SAFETY CORNER —**
"Prevention of Fires"

★ **THE TE&M EDITORIAL**
"Not By Technology Alone"

★ **PEOPLE IN THE NEWS**
See Page 22

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See Page 14

★ **INDUSTRY NEWS BRIEFS**
See Page 67

you don't have to-

'do-it-yourself!'

Let L. M. Berry and Company do it for you

Since the selling of directory advertising has become highly specialized, more and more telephone companies throughout the nation have turned to L. M. Berry and Company to handle their directory problems. Your worries vanish when you "Let-Berry-Do-It."

With forty-six years of experience, the Berry Organization has become expert in the field of directory advertising. A Berry Directory not only means maximum advertising revenue and the best public relations with your subscribers, but more . . .

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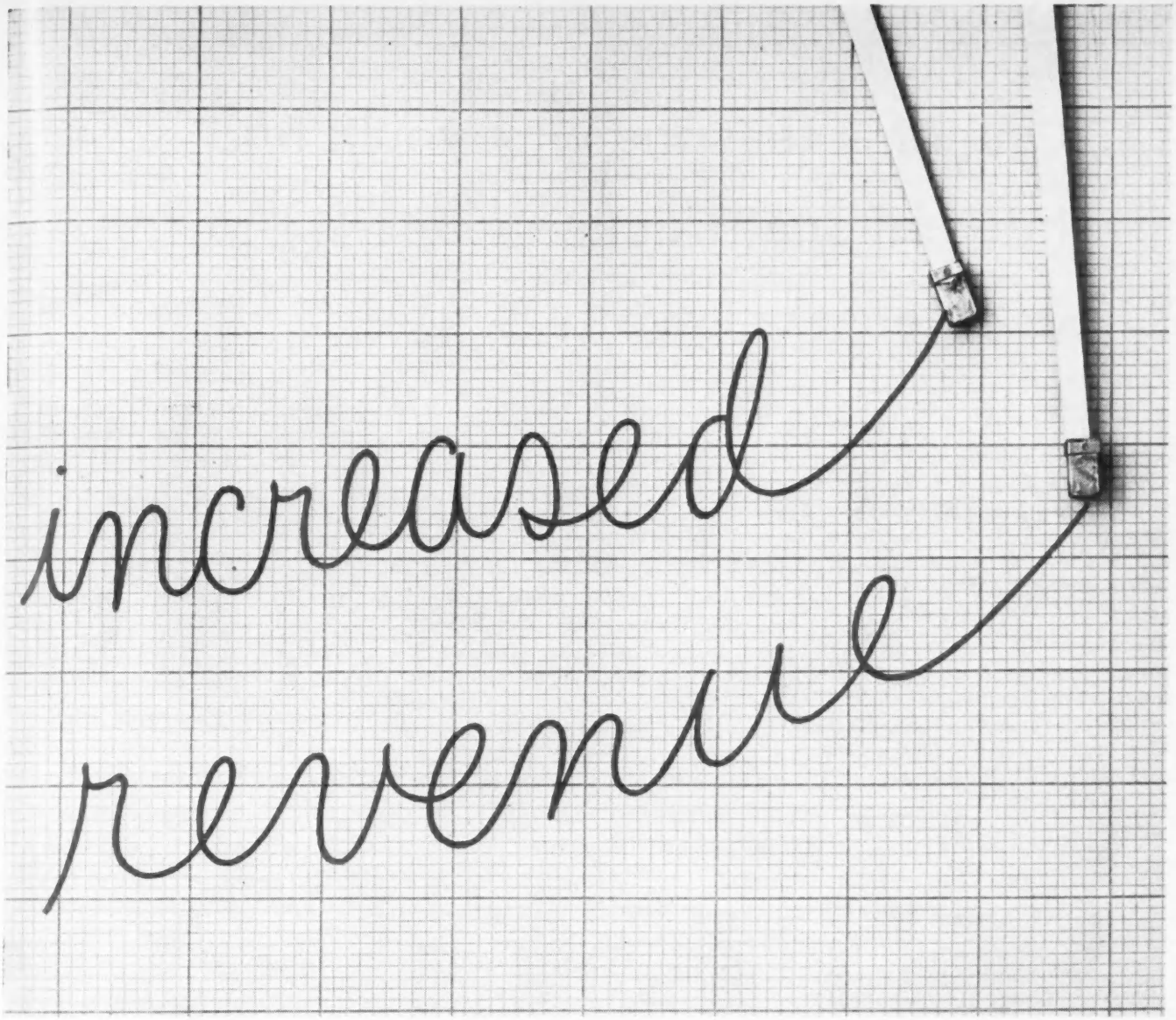
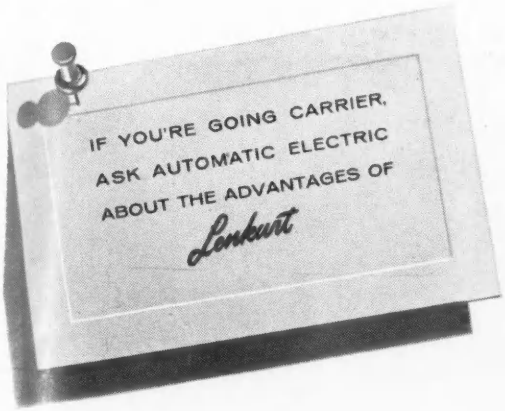


TELEMETERING...



Leasing circuits for TELEMETERING . . . one of the fast-growing new opportunities for you to get extra revenue. All over the United States, more and more circuits are being leased from operating telephone companies for the transmission of metered data (temperature, pressure, flow, etc.) to distant control points. *Who's in the market?* Pipelines, power companies, refineries, chemical processors, steel manufacturers, many others. *How can you add channels economically to tap new sources of revenue like this?* With Lenkurt Carrier, of course. Automatic Electric provides Lenkurt equipment in a complete, easy-to-own package—engineered, furnished and installed. Our engineers would be glad to help you; just drop us a line today. Automatic Electric Sales Corporation, Northlake, Illinois.

In Canada: Automatic Electric Sales (Canada) Ltd., Toronto. *Offices in principal cities.*

AUTOMATIC ELECTRIC

A member of the General Telephone System—
One of America's great communications systems

GENERAL TELEPHONE SYSTEM

New, exclusive cab-forward design

One of 9 reasons why you'll find International Trucks cost least to own!

Compact, new cab-forward INTERNATIONAL Trucks feature *low*, full-size cabs for convenient access to save drivers time and effort... short turning radius with bumper clearance for easier maneuvering even in tightest quarters.

These new INTERNATIONALS have more powerful engines in every model—more *usable* power at low rpm to keep operation and maintenance costs low. They haul bigger legal loads with improved weight distribution, with less over-all length.

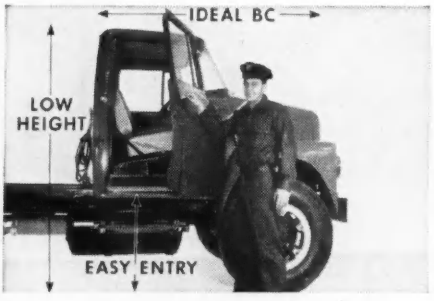
As you would expect, new cab-forward INTERNATIONALS are quality-built from the rugged bumpers to the end of the sturdy frames... built to do a truck job better, longer, for less.

And INTERNATIONAL Trucks cost *least* to own—cost records prove* this. Let your INTERNATIONAL Dealer show you today.

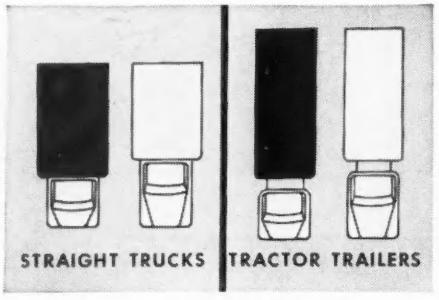
**Signed statements in our files, from fleet operators throughout the U.S., back up this statement.*

INTERNATIONAL HARVESTER COMPANY, CHICAGO

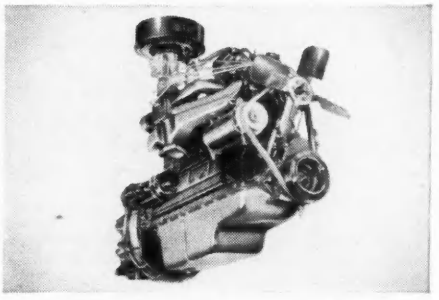
Motor Trucks • Crawler Tractors
Construction Equipment • McCormick® Farm Equipment and Farmall® Tractors



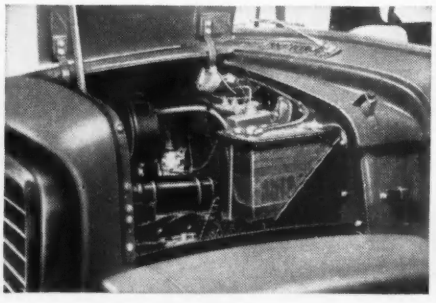
1 Longer legal payloads with ideal 89-inch bumper-to-back-of-cab dimension. Full size, unobstructed cab has 61-inch full-width seats, no wheelhousings. Only 3¼ inches higher than conventional models. Easier, more convenient entry and exit.



2 Bigger payloads with better weight distribution. More load space than conventional trucks with same over-all length—or the same load space with shorter over-all length. Easier to drive and maneuver. Safer, too, with better all-around vision.

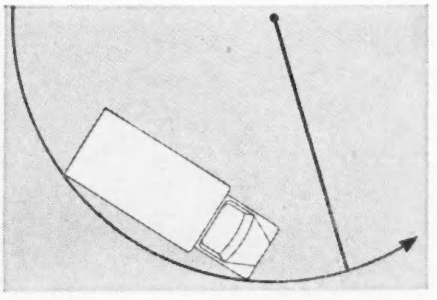


3 Lively, low cost performance with INTERNATIONAL-built engines that produce more *usable* horsepower at low rpm. Higher compression ratios for greater efficiency and economy. 12-volt ignition with "hot spark" circuit. Engines for every job.



4 Superior engine accessibility saves time and money. Large side opening hood permits complete freedom to all engine compartment components. Master cylinder, battery and most frequently serviced units are conveniently located.

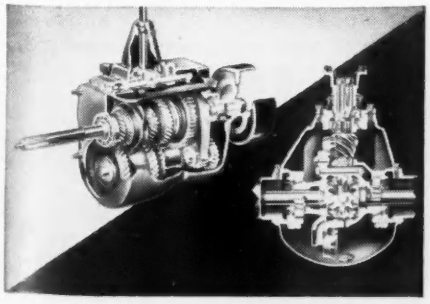
5 Low first cost. New INTERNATIONAL cab-forward models are priced right down with the lowest. They are quality-built throughout to keep operating and upkeep expense at rock bottom. Result: they are built to cost *least* to own over the years.



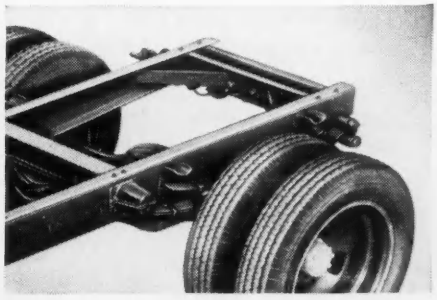
6 Minimum front overhang and true geometric steering for short turning radius with bumper clearance. Cam and roller-mounted twin lever gears are mounted ahead of the front axle. Comfortably positioned four-spoke, safety steering wheel.

This is the new INTERNATIONAL cab-forward design . . . Golden Anniversary models with short 89-inch bumper-to-back-of-cab dimension . . . trucks that are low in height, low in price. All have more powerful six-cylinder engines.

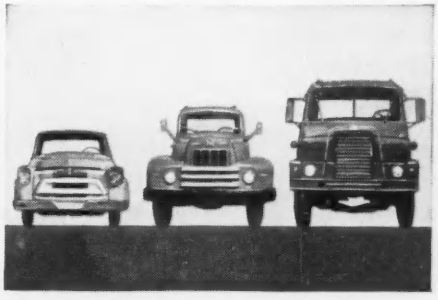
Four-and six-wheel models from 9,000 to 33,000 lbs. GVW are available with the widest selection of components and equipment to match every hauling job requirement exactly . . . built to cost *least* to own over the years.



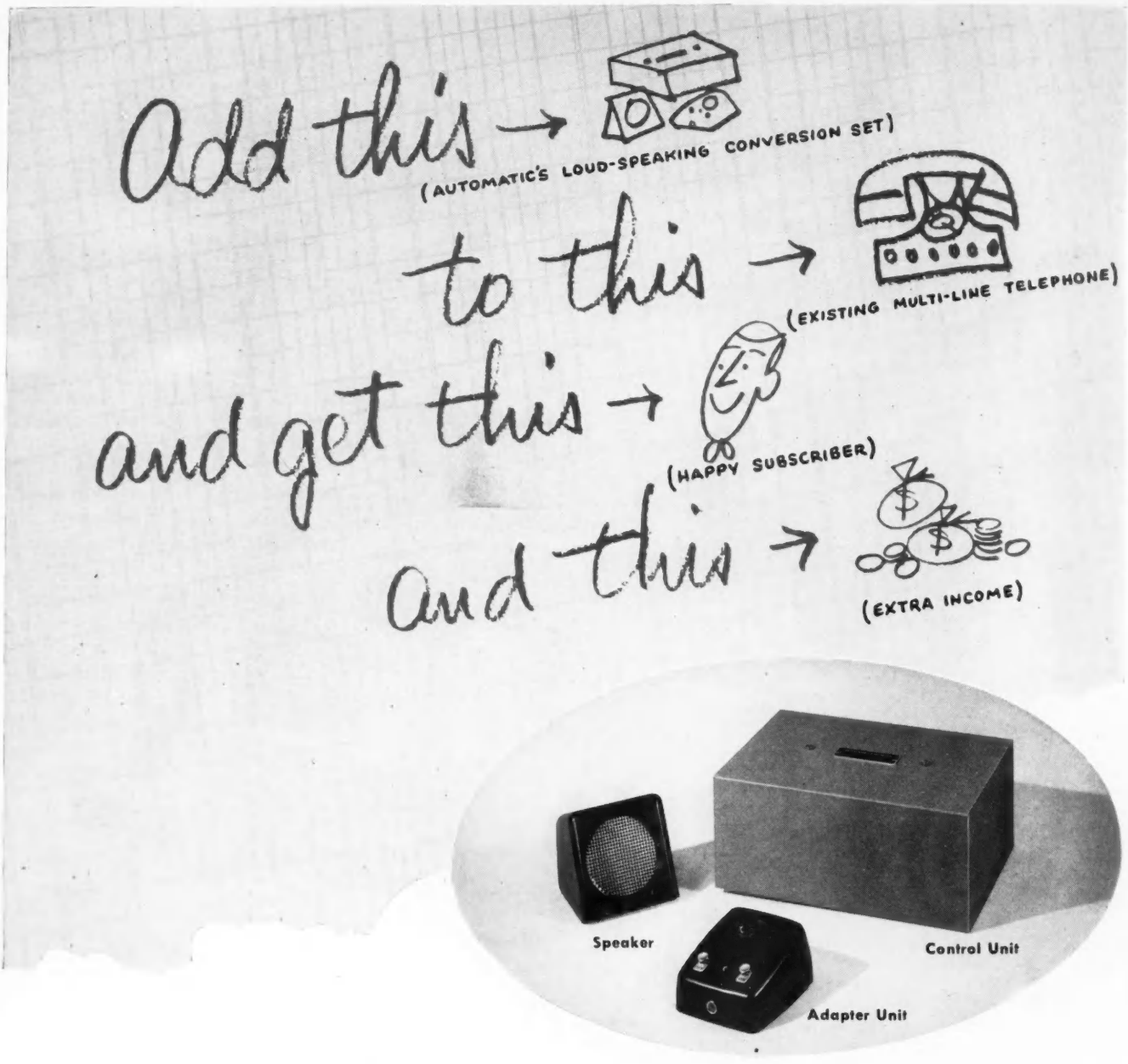
7 **Choice of transmissions** and rear axles assures you the proper capacity and final drive ratios to match the engine power, your load and road conditions *exactly*. You save on fuel. You get superior on-the-job performance and extended truck life.



8 **Steel-Flex frames** combine great strength without excess weight. Non-crystallizing cold squeezed rivets are used throughout for extra rigidity and proper flexibility. Factory-built drop-frame models are available to reduce loading time and effort.



9 **World's most complete line.** There is an INTERNATIONAL "tailor-made" for every job, half-tonners to 96,000 pounders. Choice of 4-wheel, 6-wheel and all-wheel-drive models, conventional and COE design. Every one built to cost *least* to own.



Almost any busy keyset telephone user would like loud-speaking service, too! He can have just that with, *and only with*, Automatic's Loud-Speaking Conversion Set. This handy set actually enables you to add loud-speaking service to an existing multi-line telephone quickly, easily. Result: the utmost in telephone convenience—and a sure way to added income.

Three separate units make up the Conversion Set: a Control Unit, a Speaker and an Adapter Unit, which has "On" and "Off" buttons, volume control, light signal, and microphone.

Get to know all about Automatic's Loud-Speaking Conversion Set now! Write for Circular 1867. Address:

Automatic Electric Sales Corporation, Northlake, Illinois
Or call Fillmore 5-7111.

AUTOMATIC ELECTRIC

A member of the General Telephone System
One of America's great communications systems

GENERAL TELEPHONE SYSTEM

Tonics For Small Exchanges 41

A few weeks ago, Jack Naylor, president of United Telephone Companies, took a careful look at small exchanges—the cold practical problem — where the industry stands today and what to do about it. Then he developed a few "tonics" — made up of the ingredients described by this article: (1) Wise engineering; (2) better exchange rates; (3) proper participation in toll revenues; (4) preservation of the best long-range financial structure.

Planning Pays Off 51

We are happy to present T. DeWitt Talmage's 20th article of interest to all telephone plant personnel entitled "Planning Pays Off." Based on field studies, the plant problems and the interesting solutions outlined by Mr. Talmage, are ones which go to the heart of industry-wide conditions of concern to all sizes of telephone companies, regardless of the switching system used to furnish telephone service.

Revenue Boosters 26

Telephone workers in Roanoke, Va., took a sales idea and went to work. So far their efforts have caused 21 motel operators to add room telephones to the list of services available to guests. The motel owners and operators are pleased and this article tells why.

Prevention of Fires 30

Part One of this article appeared in the August 1 issue of TE&M. Part II describes: (1) adequate preparation for fire control; (2) what to do if a fire starts; (3) how most fires are started; and (4) types of fire fighting equipment. Put the two sections together and you'll have a manual of information that may well prevent a fire at your exchange.

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Advertising Representatives

WEST COAST: Keith H. Evans & Associates,
3723 Wilshire Blvd., Los Angeles 5, Calif.
Telephone: DUnkirk 2-8981,
593 Market St., San Francisco 5, Calif.
Telephone: YUkon 2-4280.

SOUTHWEST: Ed Whetzle,
923 Cardova Ave., Dallas 23, Texas.

Telephone Engineer

AND MANAGEMENT

THE NATIONAL TELEPHONE MAGAZINE

Vol. 61 No. 16 AUGUST 15, 1957

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FRONT COVER

COVER PICTURE shows mayors of Eastern North Carolina's two largest cities making and receiving call inaugurating microwave telephone service between Fayetteville and Rocky Mount, North Carolina. MAYOR HERNDON, (left), Fayetteville, and MAYOR GRAVELY (right), Rocky Mount, discussed the development of Eastern North Carolina and specifically their own areas. See front cover story page 70.

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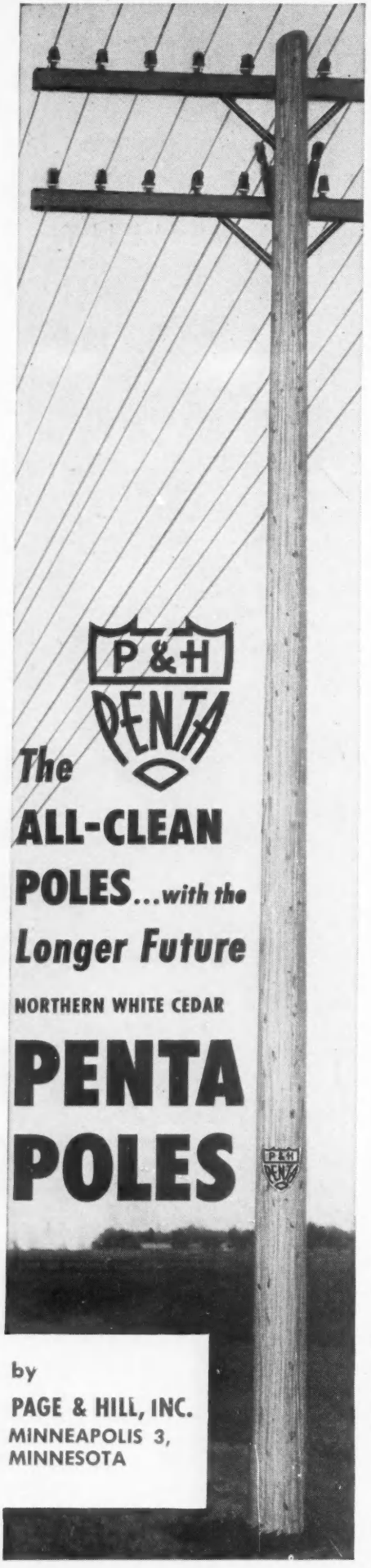


COMING CONVENTIONS

ALASKA Independent Telephone Association, Elks Lodge, Kodiak, Aug. 26-28.

TENNESSEE Telephone Association, Hermitage Hotel, Nashville, Sept. 12-13.

ARKANSAS Telephone Association, Arlington Hotel, Hot Springs, Sept. 16-17.

MICHIGAN Independent Telephone Association, Hotel Pantlind, Grand Rapids, Sept. 17-19.

ROCKY MOUNTAIN Telephone Association, Hotel Utah, Salt Lake City, Sept. 18-20.

WEST VIRGINIA Independent Telephone Assn., Blackwater Lodge, Davis, Sept. 30-Oct. 1.

NORTH CAROLINA Independent Telephone Association, Carolina Hotel, Pinehurst, Oct. 3-4.

UNITED STATES Independent Telephone Association, Conrad Hilton Hotel, Chicago, Oct. 14-16.

VIRGINIA Independent Telephone Association, Roanoke Hotel, Roanoke, Oct. 24-25.

SOUTH CAROLINA Independent Telephone Association, Clemson House, Clemson, Nov. 4-5.

ALABAMA-MISSISSIPPI Telephone Association, Thomas Jefferson Hotel, Birmingham, Nov. 11-12.

GEORGIA Telephone Association, Radium Springs Hotel, Albany, Nov. 13-14.

OKLAHOMA Telephone Association, Huckins Hotel, Oklahoma City, Nov. 21-22.

FLORDIA Telephone Association, The Balmoral, Bal Harbour, Miami Beach. Dec. 2-3.

LOUISIANA Telephone Association, Jung Hotel, New Orleans, Feb. 12-13, 1958.

MINNESOTA Telephone Association, St. Paul Hotel, St. Paul, Feb. 17-19, 1958.

TEXAS Telephone Association, Baker Hotel, Dallas, March 3-4, 1958.

KENTUCKY Telephone Association, Phoenix Hotel, Lexington, March 4, 1958.

IOWA Independent Telephone Association, Hotel Fort Des Moines, Des Moines, April 8-9, 1958.

NEBRASKA Telephone Association, (Hotel not announced), Omaha, April 22-23, 1958.

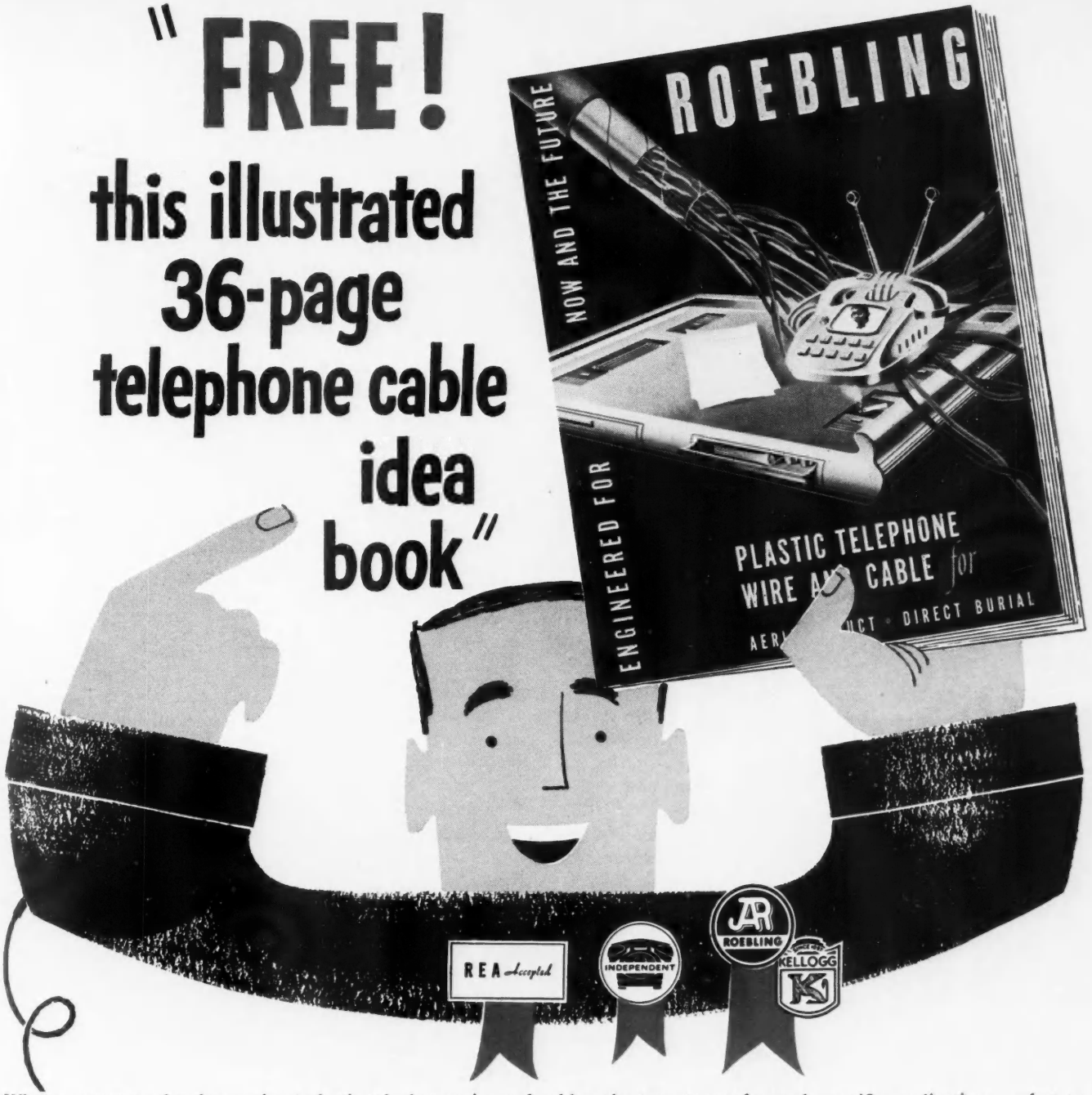
WISCONSIN State Telephone Association, Hotel and location to be announced. May 14-15, 1958.

ILLINOIS Telephone Association, Hotel Pere Marquette, Peoria, May 21-22, 1958.

PENNSYLVANIA Independent Telephone Association, Bedford Springs Hotel, Bedford, May 26-28, 1958.

NEW YORK Telephone Association, Scaroon Manor, Schroon Lake, June 16-18, 1958.

"FREE! this illustrated 36-page telephone cable idea book"



Whatever you need to know about plastic telephone wire and cable – the type to use for each specific application ... what to look for in the plastic telephone wires and cables you buy ... how to splice them – you'll find it all in this one helpful book. Included are standard sag calculating tables, sample problems which show, step by step, just how to figure sag and tension, map showing geographical location of loading districts in the U.S., graphs, illustrations, charts, instructions and descriptions of each of Roebling's sturdy, easy-to-install, long-life plastic telephone cables and wires.

Roebling telephone wire and cable is distributed exclusively to independent telephone companies through Kellogg Switchboard and Supply Company. Thus you get the benefits of superior Roebling cable, plus the unmatched telephone system engineering and installation experience of Kellogg. There's a Roebling wire or cable for every type of installation – aerial, duct, direct burial. This free book tells you about them and how to use them. You'll want a copy for every key man in your organization. Write your nearest Kellogg Switchboard and Supply Company branch or its General Sales Office, 79 West Monroe Street, Chicago 3, Illinois, for your copy, or mail the coupon to John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

ROEBLING

A Subsidiary of The Colorado Fuel and Iron Corporation

John A. Roebling's Sons Corporation, Trenton 2, N. J.

Please send a free copy of Roebling's new Plastic Telephone Wire and Cable Idea Book, to–

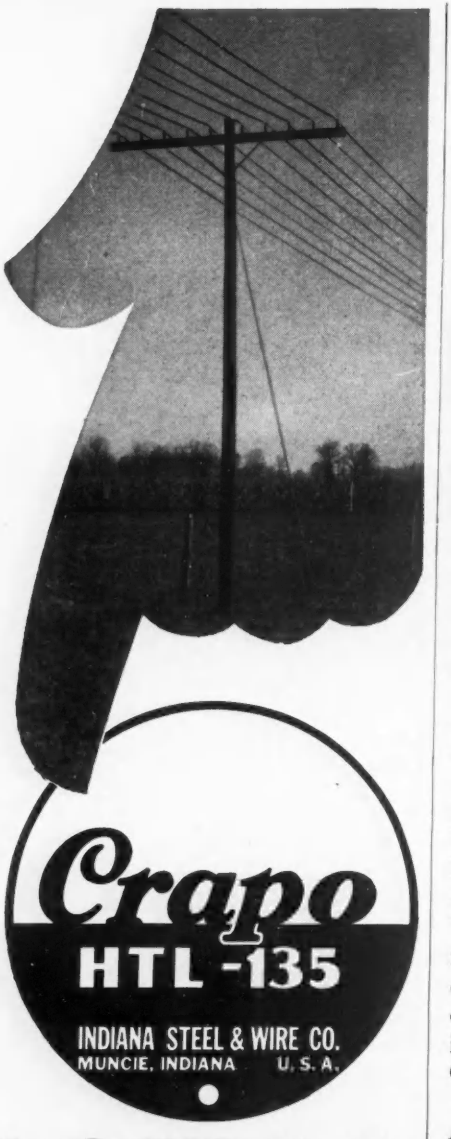
Name_____

Company_____

Address_____

City_____

Zone_____ State_____



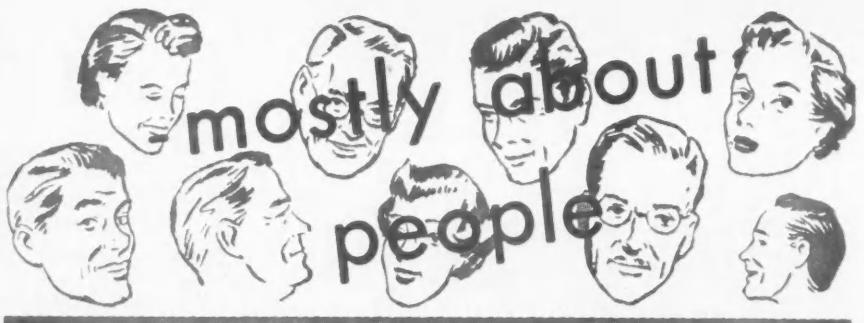
LOWER
Cost Per Mile

● Efficient rural telephone circuits can be built at minimum overall cost where Crapo HTL-135 High-Tensile Line Wire is used to full advantage. For Crapo HTL-135 makes possible spans up to 350 feet in heavy, 540 feet in medium and 650 feet in light loading districts. Longer spans mean fewer pole structures with substantial savings in material and labor costs per mile.

The rugged tensile strength of Crapo HTL-135 and its heavy galvanized coating provide dependable and economical service life on typical rural lines.

Ask your jobber for details or write direct for engineering data!

INDIANA
STEEL & WIRE COMPANY
Muncie, Indiana



ACROSS THE EDITOR'S DESK

Directories

THANKS to the nice telephone folks from El Paso, Ill. for sending us their new August 1957 directory. Page 2 was particularly appealing to us in the public relations sense. Listed at the top of that page is a statement from management that reads "it is our desideratum to present to you our 1957 force who make it possible for all of you to say 'hello' to the entire free world." Following that statement is the entire list of the employes of the company from president & general manager V. C. Gordon on through the active force and showing each name and duty. This is the 58th year for the company and on the directory page is the slogan "First Magneto — The Common Battery — Next Dial."

Applaud Higher Rates

LEAVE it to the H. M. Stewarts of Georgia for not getting caught with their public relations down. Milt sent us a copy of the Dahlnega Nugget, the newspaper from one of the towns in which his Standard Telephone Company operates. It was impressive to us to read the column of Jack Parks, editor of the Nugget, and his discussion of the company policy with their coming rate increase as the subject. He said: "We feel this rate increase is entirely justified. The loan the company has reecived is not a gift. It must be repaid over the years." The editor is carrying the ball beautifully for Milt Stewart. Oh yes, his loan was approved and his rate adjustment is before the commission to be put into effect when dial service is cutover in 1958.

Frank E. Bohn

THE JULY issue of the Indiana General News, magazine of the General Telephone Co. of Indiana, devoted a full page of its July issue to Frank E. Bohn, a man familiar to most of our readers. Frank retired January 1, 1957, but the memory and the record of his accomplishments during his years of service to the Independent telephone industry will live through the years.

Boothettes

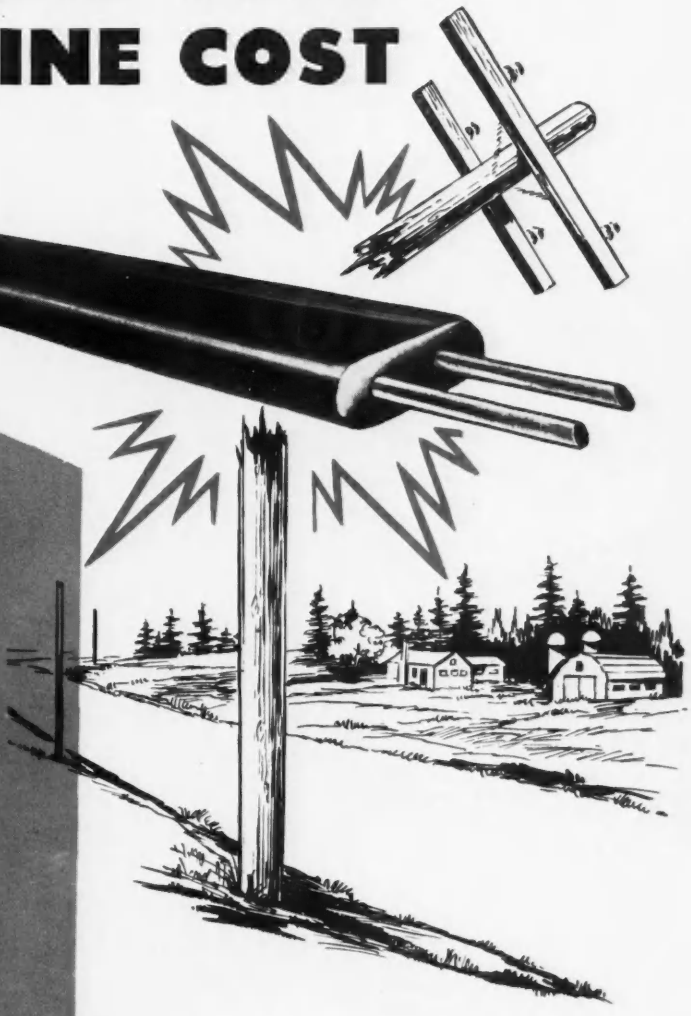
WE HAVE been traveling quite a bit lately and have had many occasions to use roadside telephone booths. We have also noticed in certain areas that boothettes are now making their appearance and we will have to admit we like them.

This type of service is quite profitable. In many cases the smaller Independents feel they cannot afford a full size outdoor booth so the introduction of the boothette type should appeal to them. The larger metal booth attracts more attention and more business but there is a market for this smaller more compact unit.

Vacation Time

WE ARE looking forward to a coming trip that must be finished in August. Its a motor trip ala J. A. Smith, our late father, and we hope to drop by and chat with a number of our old friends in the industry as we drive through the country. Trails end will be a lake or a river somewhere where we will work on an avocation that has more followers than any other sport known. Just which direction we will travel is unknown as this is written and will be until we start, as this is going to be one of those things. We hope we will be your way and you are not doing the same thing we are — away from the office, that is!

REX ONE PAIR CUTS POLE LINE COST



A Span lengths up to 600 feet are possible with Rex One Pair Distribution Wire. Extra service poles are eliminated on long extensions and long drop runs.

B Economically installed — no cross arms, pins, or glass insulators. Wire is simply installed on tangent supports and drive hooks.

C No tree leakage — a heavy extrusion of high molecular weight, high dielectric strength polyethylene, enclosing both conductors prevents accidental grounding and eliminates excessive right of way clearance.

D Excellent transmission characteristics — similar electrical properties to R.E.A. listed Rural Distribution Wire assure good subscriber service.

E Easily transposed — no special brackets; simply twist span at installation. Cross talk and induction noise are kept to a minimum.

F Ordering data: Two conductors #12 or #14 AWG Copperweld or .083 steel. 5,000 or 15,000 foot reels.

Other REX TELEPHONE PRODUCTS

EXCHANGE AREA CABLE
R.E.A. LISTED
DIRECT BURIAL CABLE
RURAL DISTRIBUTION WIRE
R.E.A. LISTED
URBAN DISTRIBUTION WIRE
'D' INSIDE WIRING CABLES

SEND FOR TECHNICAL SPECIFICATIONS and PRICES

REX WIRE & CABLE

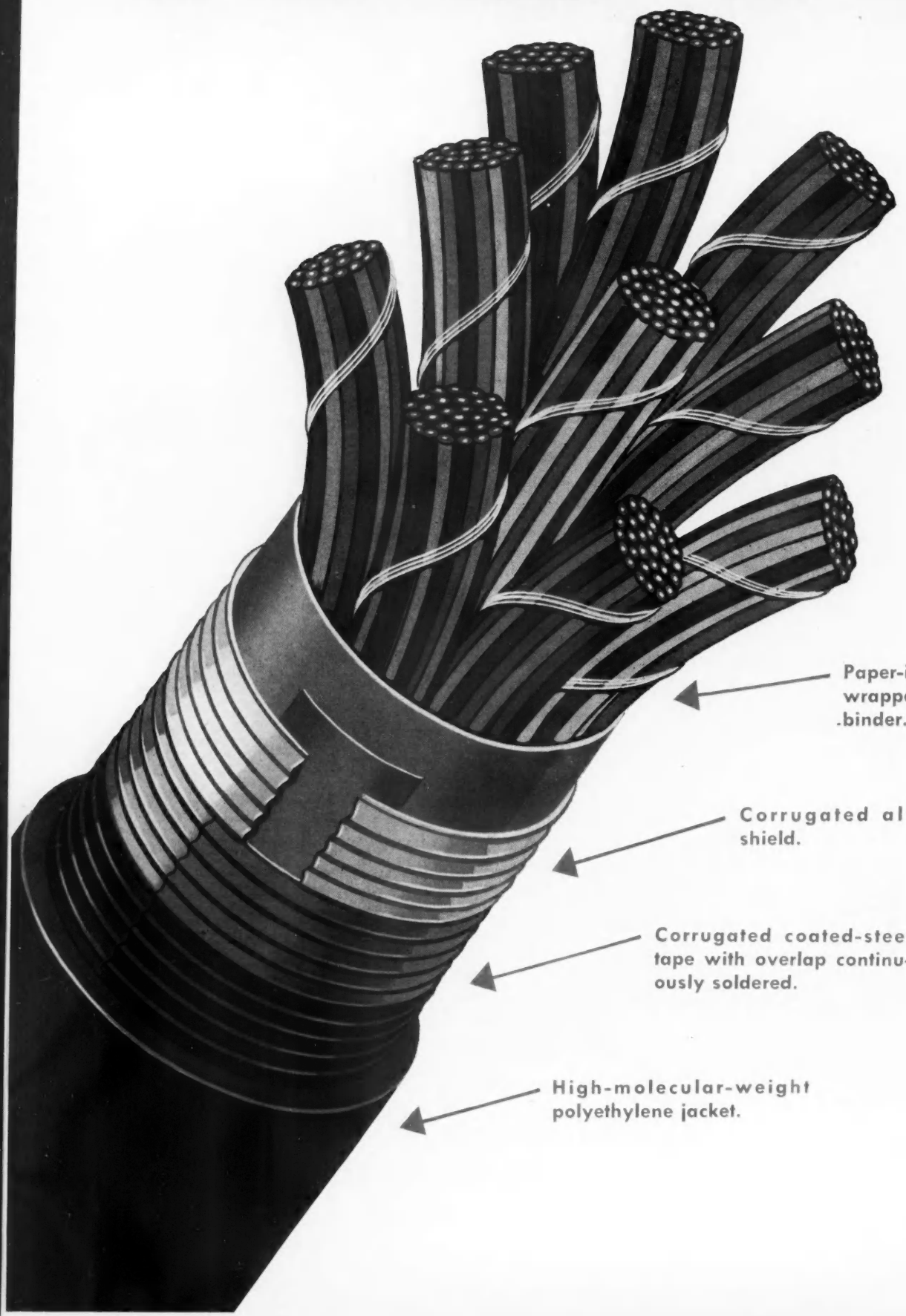
THE REX CORPORATION

101 HAYWARD ROAD, WEST ACTON, MASS.

INDEPENDENT

NOW...Y

FROMU


Paper-insulated conductors wrapped with a paper core binder.
Corrugated aluminum shield.
Corrugated coated-steel tape with overlap continuously soldered.
High-molecular-weight polyethylene jacket.

YOU CAN BUY **STALPETH** *

AUTOMATIC ELECTRIC

Unique sheath construction of this plastic cable gives you superior performance, greater economy

It's important news—General Cable's new Stalpeth exchange and toll cable! Stalpeth has all the protective qualities you want, without excessive weight. Combining a layer each of aluminum, steel and plastic over a paper-insulated core, Stalpeth handles easily—installs quickly and economically.

Here's how the sheath is made. First, a corrugated aluminum shielding tape is applied longitudinally over the paper-insulated core. Then, a corrugated coated-steel tape is also applied longitudinally, *with the overlap continuously soldered.* Finally, an extruded, high-molecular-weight polyethylene jacket is plastic-cemented to the steel. Here's moisture-and-corrosion-resistant protection that will last and last.

In aerial installations, Stalpeth saves you money because you can use lighter messenger strands, longer spans and fewer poles. In ground installations, Stalpeth's high-molecular-weight polyethylene jacket is an excellent solution to moisture and corrosion problems.

Stalpeth is manufactured in conductor sizes 26 AWG, 24 AWG, 22 AWG and 19 AWG, in cables ranging from 16 to 2121 pairs.

General Cable's Stalpeth is *new*—but Automatic's Supply people can tell you all about it. Just get in touch with your friendly Automatic Electric representative or your nearest A. E. Sales Corporation warehouse.

Automatic's 5 friendly warehouses:

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407 North Elizabeth St.
Chicago 22, Ill.
HAymarket 1-4300

"Michie" Hester, Mgr.
2915 Moore St.
Richmond 21, Va.
Tel. 6-9280

Ed. J. Chok, Mgr.
2360 N. W. Quimby St.
Portland 10, Ore.
CApital 3-7244

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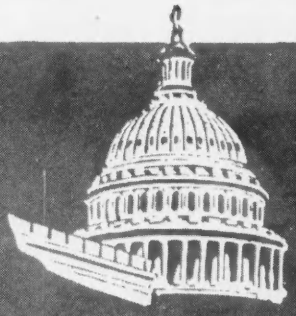
AUTOMATIC ELECTRIC

A member of the General Telephone System—One of America's great communications systems

GENERAL SYSTEM

*Manufactured and sold under patent license agreement with the Western Electric Company, Inc.

WASHINGTON NEWSLETTER



Private Line Services

EXTENSIVE COST, investment, and revenue studies of private line services, furnished to the Federal Communications Commission by the Bell System and Western Union Telegraph Co., will be examined in detail before the Commission goes into hearings on other aspects of its general investigation of the common carriers' private line services, it has been decided at a prehearing conference.

Counsel for the American Telephone & Telegraph Co. and Western Union agreed at the meeting, presided over by Examiner J. D. Bond, that it will be necessary to complete testimony and cross-examination on the cost studies before they will be able to go ahead with evidence on such subjects as rate proposals, justification of the multichannel (volume rate) treatment of private line services and multichannel rates, effect of the schedules on competition, and construction and termination charges.

Set up at the conference was a long-range program for the hearing which includes an informal conference Sept. 24 on the form in which testimony on the cost studies is to be presented; distribution of written testimony on the subject to all parties Oct. 15; and opening of formal hearings Tuesday, Nov. 19.

Subject to the same schedule is detailed customer usage data developed by the Bell System and Western Union at the request of the FCC staff, as was the cost material. Procedures will be worked out to delete any identification of the customers themselves, on the basis that this is competitive information.

In effect, it was decided to disregard direct testimony and exhibits offered by AT&T at the hearing on the original multichannel tariff, in December, 1955. Since that time, it was pointed out by AT&T General Solicitor John T. Quisenberry, the original tariff has been withdrawn and a new one has gone into effect, and other conditions have changed appreciably. As a result, AT&T plans to put in an entire new case. The exhibits previously offered were withdrawn, but the testimony will remain in the record for background purposes.

Present at the conference, in addition to spokesmen for the Bell System, Western Union, and the FCC Common Carrier Bureau, were counsel for the four intervenors — the General Services Administration, representing federal executive department agencies, Department of Defense, Aeronautical Radio, Inc., and United Press Associations.

The study of AT&T Long Lines Department private line services, excluding program transmission services, showed an overall rate of return of 6.4%. The study, requested by the FCC staff in December, 1955, and summarizing a tremendous amount of material, was based on investment as of Dec. 31, 1955; revenues for December, 1955, and January, 1956, carried out to an annual basis; and expenses generally based on expense/plant ratios for 1955.

A separate portion, providing a "forward look" when the SAGE (semiautomatic ground environment) system of air defense is fully implemented, showed a return of 6.0% on the SAGE project alone. Based on the 6.4% figure for private line services, full construction of the SAGE system would pull down the overall return slightly. The return figures are after provision for federal income taxes.

Western Union's study of its leased facility service, based on services as of March 31, 1956, showed a rate of return of 2.94% before federal income taxes.

Since the original hearing in the multichannel case, and following a series of discussions between AT&T and Western Union, at the suggestion of the Commission, to narrow their areas of difference at that time, the companies reached an agreement in principle under which Western Union will act as agent in selling telephone company private line services arranged for alternate record and voice use, where the station equipment for non-voice communication is not furnished by the telephone company.

Subsequently, work has gone forward on ironing out the details of the program and reaching a written agreement, but the pact had not been made final as of early August.

Bargaining Demands

BARGAINING demands of the Communications Workers of America in the union's upcoming negotiations with Bell System units, as outlined following a meeting of the CWA Executive Board at the union's near-Washington school location at Front Royal, Va.,

Please turn to page 18

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Give the Best Service

KOILED KORDS have proved over the years that they give the best service to subscribers and telephone companies alike.

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KOILED KORDS are smooth, clean and cannot be harmed by moisture, grease, acid fumes or sunlight. Be sure your subscribers have the best . . . KOILED KORDS

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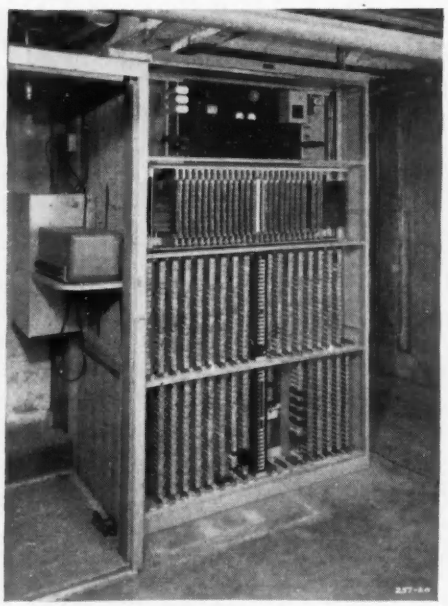
The Story of 3 Leich PABX'S...

and the Friends They Made

FAIRFIELD, IOWA — Three businesses in this growing Iowa town of over 7,000 people have Leich PABX installations. Here's the story of why they're making friends among the Fairfield people who use them.

The United Telephone Co. of Iowa in Fairfield installed them at American Chain and Cable Co., Parsons College, and Louden Machinery Co. The two 40A PABX installations and 88A PABX have given these companies efficient, fast business telephone service. They're pleased with the greater traffic capacity, faster extension of calls, and variety of service features these PABX's offer.

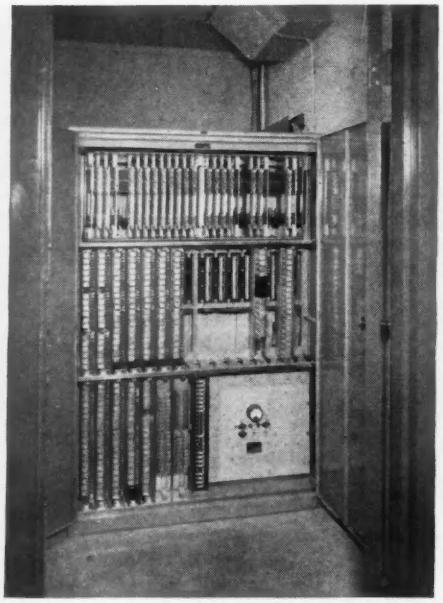
You can make customer-friends, too, by recommending Leich PABX installations. Write for more information today.



1. The folks at Louden Machinery Co. work with a Leich 88A PABX. Louden manufactures monorail and crane equipment for material handling, as well as equipment for farm buildings. Its modern Leich switchboard has an optional conference call circuit and a paging circuit.

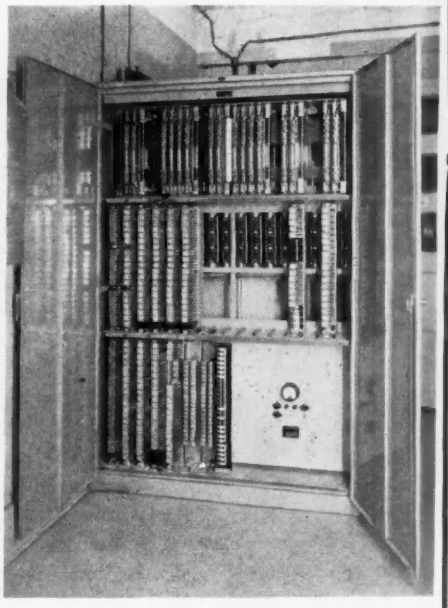
The paging circuit allows any inside telephone to dial a number which connects them with a DuKane paging system. The caller can then vocally page anyone throughout the company.

This Leich 88A PABX is equipped with 78 lines, 9 local links, 5 city trunks, and the compact Leich attendant's turret. Ten more lines and 3 city trunks can be added.



2. The Leich 40A PABX switchboard shown here is at American Chain and Cable Co. This plant manufactures cable controls and assemblies for the automotive and aircraft industries.

Their Leich PABX is equipped with 30 lines, 5 local links, 5 city trunks, and a keyset turret. The capacity of the 40A is 40 lines, 6 local links, and 10 city trunks. Local links are not tied up on extension dialed calls to city trunks.



3. Parsons College also has a Leich 40A PABX. The Leich attendant's turret offers faster, easier extension of incoming city trunk calls. The all-relay Leich dial switchboard furnishes dependable switching with a minimum of maintenance. It's modeled after the famous Leich Dial System.

The Parsons College 40A PABX has 40 lines, 4 city trunks, and 4 local links.

WRITE FOR MORE INFORMATION ON LEICH PABX'S TODAY

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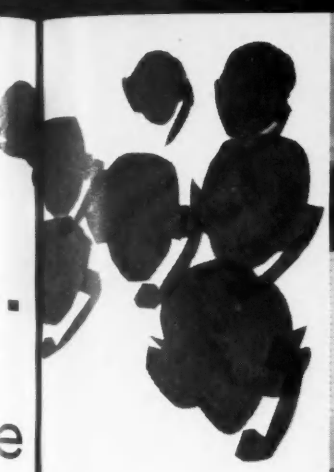
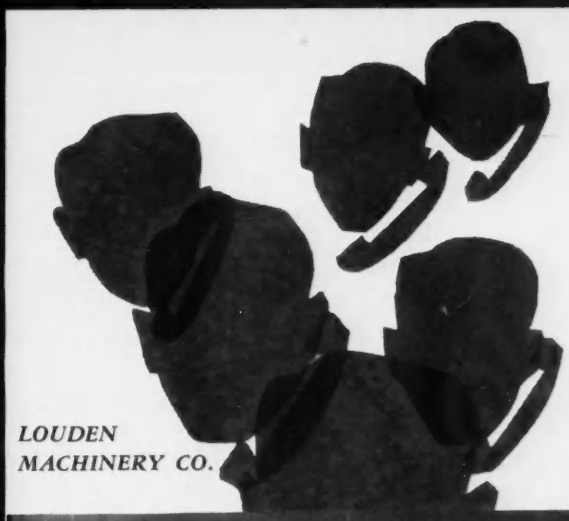
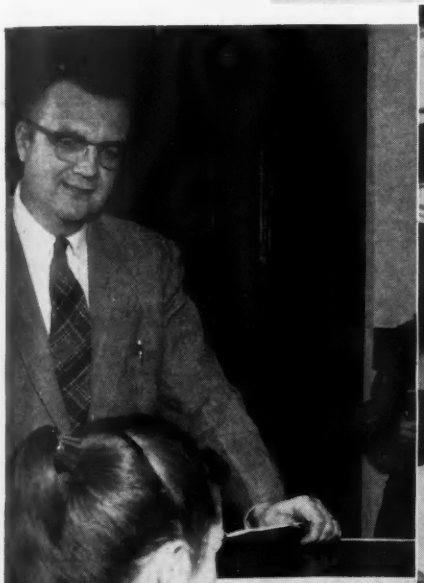




LOUDEN MACHINERY CO.



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PARSONS COLLEGE

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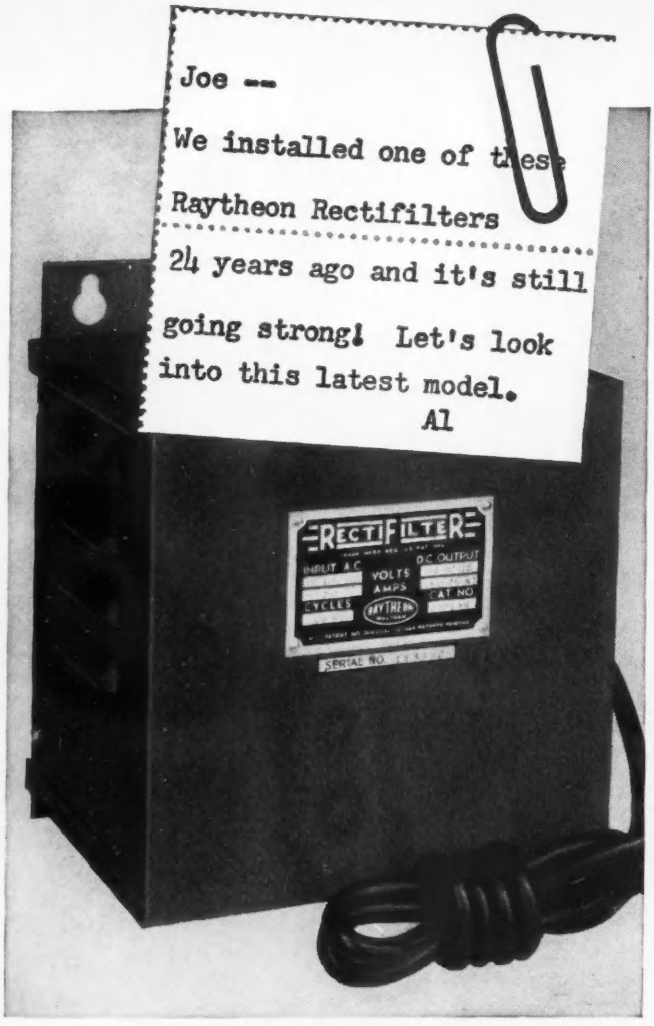

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Excellence RAYTHEON *in Electronics*

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Commercial Equipment Division, Waltham 54, Mass.

Washington

(Continued from page 14)

will not occasion very many surprises among observers of the industry.

Of more immediate interest, perhaps, in view of the heavy emphasis placed on the program in recent months, is the board's action in ordering further negotiations on a revised group life insurance plan offered by the Southwestern Bell Telephone Co.

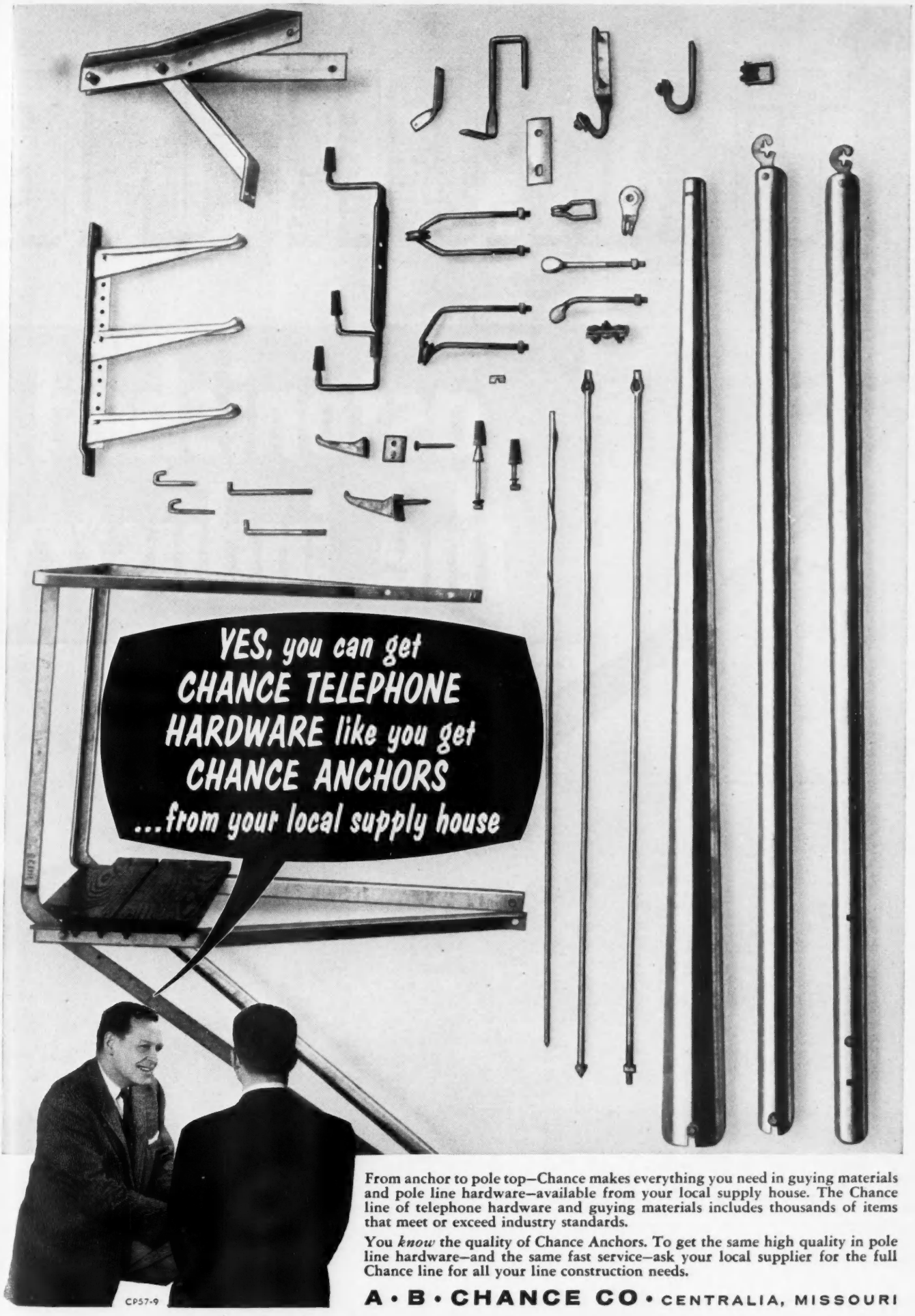
For some months, attention in CWA-Bell System group life insurance discussions has centered on Southwestern Bell, where the most intensive negotiations have been going on. The Bell companies' group life insurance plan has been accepted by various independent unions and the International Brotherhood of Electrical Workers, but CWA has refused to adopt it for the employes it represents, and its leadership has won convention approval for a referendum among the membership on setting up a union-sponsored group life program.

There is strong feeling among observers of the scene, however, that ultimately CWA and Southwestern Bell can work out a mutually acceptable group life plan, which then would become the "pilot" for similar arrangements between other Bell companies and the union.

In any event, the union announcement of the Executive Board meeting, and the decision to order further negotiations, pointed out that Southwestern Bell's latest offer set forth "several advantages" over the preceding one, including the fact that it would be in the form of a contract between the company and the union; grievance procedures would be established; and employes who did not receive sufficient pay to cover an insurance deduction (for example, if they were on strike) would have a three-month grace period during which the insurance would not lapse, and after which they could make the delayed payments retroactively.

The CWA perhaps indicated the areas on which it wishes further discussions — although it did not say so specifically — in the announcement with the comment that "There would be no discretionary right to purchase a smaller amount of insurance. Pensioners would receive scaled-down amounts of life insurance at no cost. These two provisions remain in the company's latest proposal in Southwestern."

As described in another report on the board meeting, bargaining demands for this year include "demands for basic wage increases, health insurance, improved vacations — three weeks after 10 years' service, four weeks after 15 — a shorter workweek in some areas of the union's operation, elimination of wage differences between various areas of the country, and improved arbitration machinery with arbitration as a terminal point for the settlement of all grievances."



From anchor to pole top—Chance makes everything you need in guying materials and pole line hardware—available from your local supply house. The Chance line of telephone hardware and guying materials includes thousands of items that meet or exceed industry standards.

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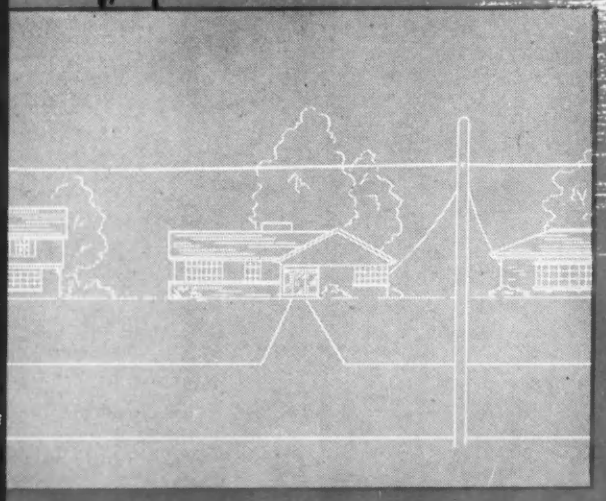

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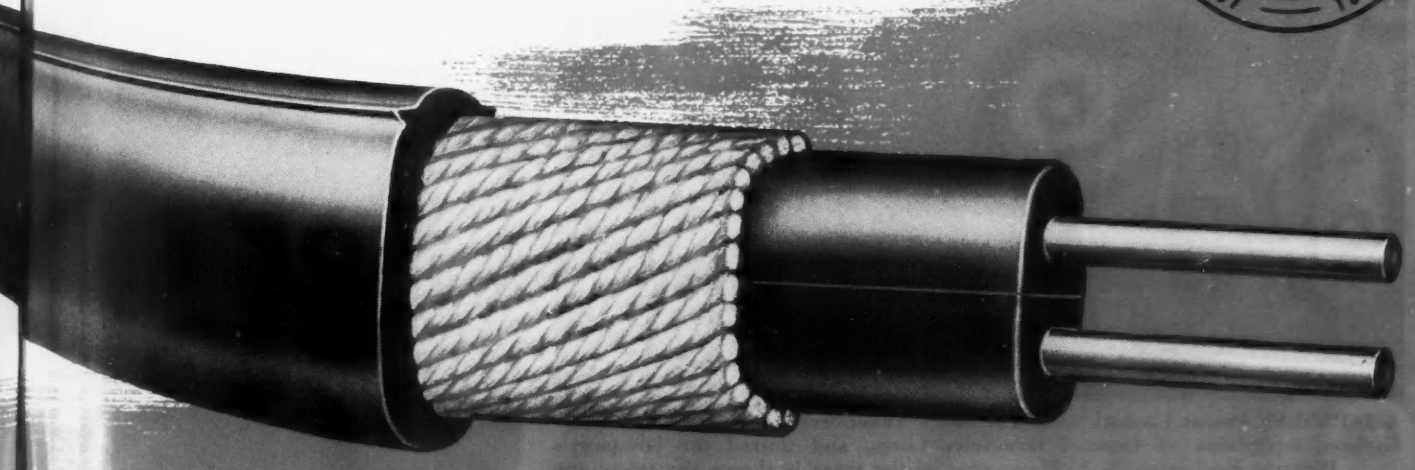
After more than ten years in test installations WB TELEPRENE Drop Wire shows no appreciable deterioration . . . it is still providing good-as-new service. Before WB introduced neoprene jacketed TELEPRENE the *average* life of drop wire was only seven years . . . up to now no "average" has been established for TELEPRENE.

Independent Telephone Companies have saved hundreds of thousands of dollars by using extra-long-lasting neoprene jacketed TELEPRENE . . . consequently they now expect comparable high quality from *all* WB telephone wires . . . AND THEY GET IT!



Well Built Wires Since 1899

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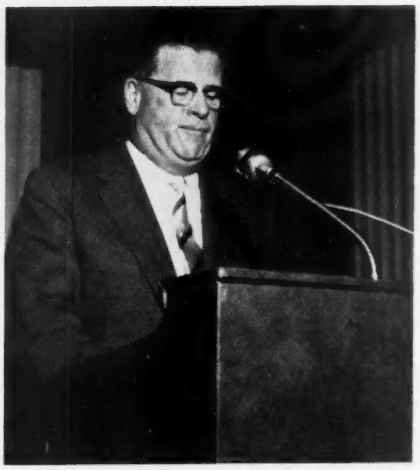
WHITNEY BLAKE COMPANY

PEOPLE IN THE NEWS

GORDON L. NORD, vice president, Schauer Manufacturing Corp., Cincinnati, returned recently from a meeting of the delegates of the Semi-conductor Rectifier Section of the National Electrical Manufacturers Association, which was held in New York. This Section of the NEMA will send two delegates to the 1957 International Electrotechnical Commission's meeting in Moscow, Russia, it was announced by Joseph F. Miller, managing director. Seated, left to right are E. A. HARTY, manager, production engineering, rectifier department, General Electric Co., and I. R. SMITH, manager, rectifier engineering, Westinghouse Electric Corp. Standing, left to right, are GORDON L. NORD, vice president, Schauer Manufacturing Corp., and W. F. BONNER, staff technical assistant, Federal Telephone & Radio Co., a division of International Telephone & Telegraph Corp.

A JAPANESE Patent Control Specialist Study Team recently visited Stromberg-Carlson, a division of General Dynamics Corp., and toured the company's Main Plant in Rochester, N. Y. Here, part of the team is shown the telephone assembly line by FRANCIS E. BLAKE, second from right, assistant patent counsel at Stromberg-Carlson, and J. WARREN WHITESEL, second man from left, a patent attorney. FRANK W. FLETCHER, project manager of the International Cooperation Administration, is at the right. The group representing the Japanese government and industrial management, is in the United States studying and observing patent management and control. The study team is sponsored by the International Cooperation Administration.

"OUR PLACE IN THE SUN," was the title of a speech FOSTER B. McHENRY, vice-president of the United States Independent Telephone Association, presented during the last session of the California convention.



"AN INTROSPECTIVE View Of The California Public Utilities Commission" was discussed by Honorable MATTHEW J. DOOLEY, commissioner of the California Public Utilities Commission at California convention.

JAMES S. CANTLEN, vice president of Pacific Telephone & Telegraph Co., discussed "Safety — A Family Affair," before members of California Independent Telephone Association during the last day of the meeting.

IMAGINE! $162.25 PER MONTH*

at this out-of-the-way location

You'd be surprised at some of the unlikely locations that turn out to be profitable paystation sites. Take this intersection in Fort Wayne, Indiana. It's out of the main business district, and traffic is light. Yet the telephone company, after careful checking, saw good revenue potential here. So an AUTELCO paystation was installed. The result speaks for itself:

**Average gross revenue per month for the last six months was an amazing $162.25.*

Many locations in your area could prove as profitable as this Fort Wayne intersection. Our Survey Simplifier will help you determine the right locations. For your copy, write: *Automatic Electric Sales Corporation, Northlake, Illinois. Or call FIlmore 5-7111.*

Circular 1877 gives you detailed information on the new AUTELCO "80" series paystations. Write to the above address.

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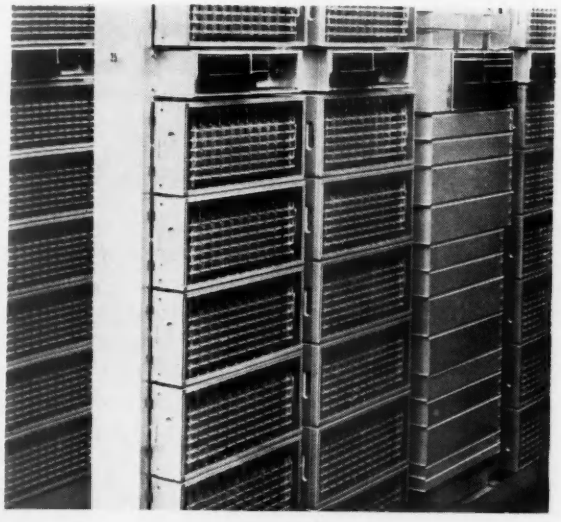

-PATH

Recently the management of the Mansfield, Ohio, Telephone Company appraised the industrial, commercial, and residential growth of their city. They projected future requirements on the telephone system. They took a searching look at the advances that would shortly become reality in the telephone industry.

This long range appraisal and analysis convinced them that they required new switching facilities to keep pace with growth and provide for the future.

The Mansfield Telephone Company determined that their requirements could be met only with switching equipment that *allowed complete flexibility in number assignments . . . . . was compatible with other telephone systems . . . . . was designed for nation-wide toll dialing . . . . . had the ability to meet unusually high traffic peaks without interruption of*

service . . . . . provided superior noise-free transmission with faster and more efficient operation . . . . . offered highest service reliability . . . . . required an absolute minimum of maintenance . . . . . needed less space to allow for future expansion without additions to the building.

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June 1, 1957, the Mansfield Telephone Company cut over their new 8000 line North By-Path Crossbar switching equipment.

This represents another large progressive Independent operating company prepared for the future with North By-Path Crossbar.

See your North representative to learn how North By-Path Crossbar switching equipment can serve you now—and in the future!

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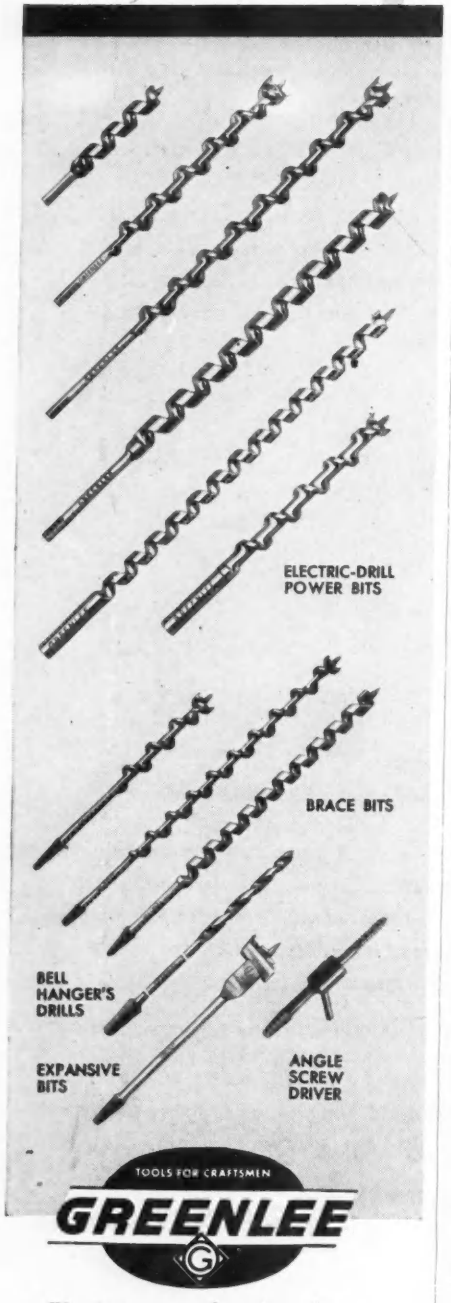
BORING TOOLS
for pole, crossarm, and timber work . . .



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REVENUE BOOSTERS

The Roanoke Motel Story

BEHIND the scenes of motels in and around the Roanoke, Va. area there is an interesting telephone story. It involves some 21 motel installations by the Roanoke district, either in operation now or under contract, for the convenience and use of business travelers and tourists.

Nationally known as the "Star City of the South," Roanoke has a population of more than 100,000. It is located in the midst of Virginia's Blue Ridge Mountains and its north, south and east-west highway routes support a large amount of traffic. As a result during the past several years a number of motels have been built in the area. Many have added room telephones to the list of services available to guests and are featuring them in their outdoor advertising. Not all of the installations are in Roanoke proper. Nine of the 21 are outside the city and as far away as 200 miles. Some are located on the less traveled highways.

That motel owners and operators are more than pleased with their new telephone facilities and the favorable reactions expressed by their guests is best revealed in the following excerpts from some of their typical letters to Roanoke telephone people:

"We felt that room telephones were a necessity in our operation since we wanted to attract commercial men to our court, but we have been surprised at the number of tourists who also use this service often. When we opened in 1953, *a PBX switchboard with two central office lines servicing* 42 *telephones was installed. Today a larger switchboard has replaced the first installation. We now have four central office lines, four direct toll lines to the operator, all of which service* 69 *telephones. Our tourists are continually making favorable comments about this extra service."*

* * *

"I want to thank you and your company for helping to make this a prosperous year. As you recall, you installed the larger desk model switchboard here at the motel. In a short time my commercial business has almost doubled. The tourists have often commented on how convenient it is to have telephones in their own rooms to let the folks at home know how they are."

* * *

"Telephones were recently installed in 12 *rooms of our motel and a switchboard was placed in the office. We are very pleased with the telephones and the favorable comments about them from our guests."*

* * *

Unquestionably, travelers find telephones a real convenience wherever they are. And Roanoke area motels are giving their guests what they want in the way of modern, convenient service.—*Chesapeake & Potomac Telephone Co.*

"TFT" —

IN WILKES-BARRE, Pa., a citizen was getting a haircut when a friend walked into the barber shop, looked at the customer's thinning hair, and remarked, "T-F-T." *What did he mean? For the definition see "Revenue Boosters" in the next issue.*

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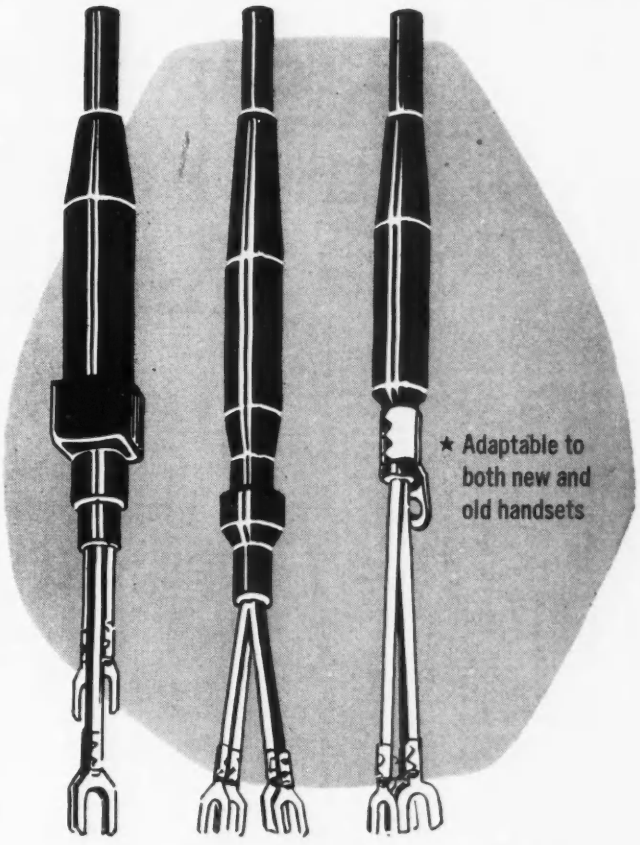

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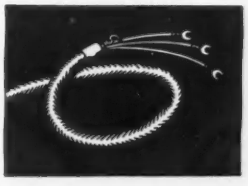

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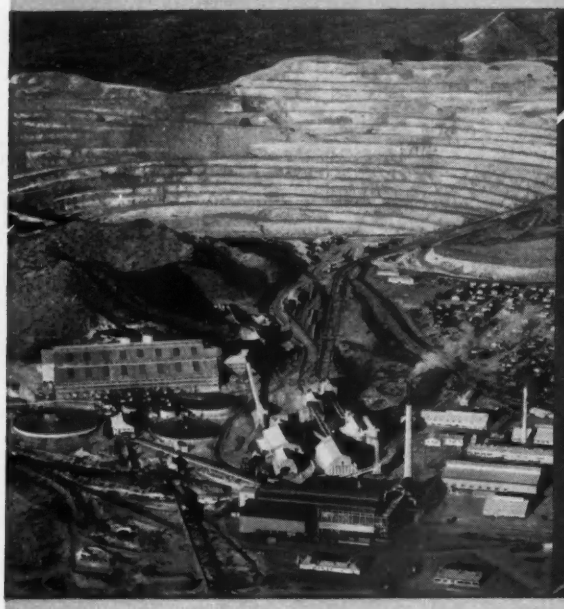

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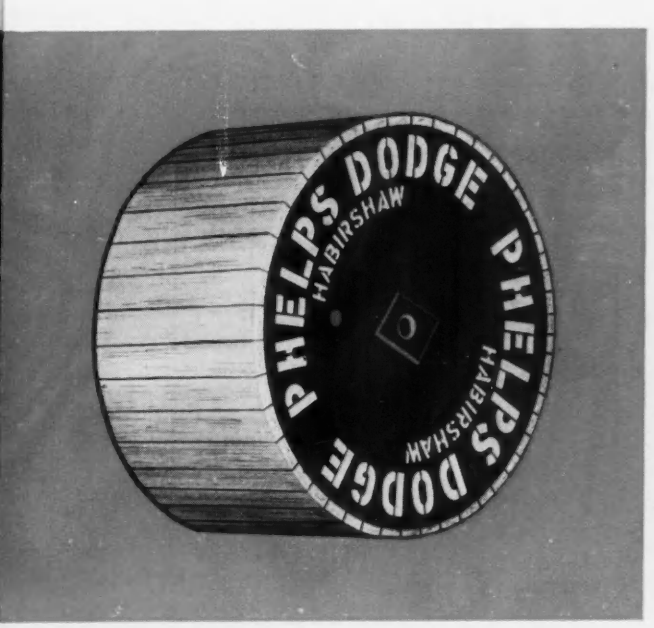
- Years of manufacturing experience in the communications field.
- Complete line of paper and plastic insulated telephone wire and cable to serve your needs.



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SAFETY CORNER

Prevention of Fires (Part 2)

What To Do If A Fire Starts

(A) Warn every person in the vicinity of the fire. Keep calm yourself.

(B) Notify the fire department as quickly as possible.

(C) Close all doors, windows and shut off blowers in order to cut off the draft.

(D) Keep as close to the floor as possible.

(E) Locate the seat of the fire and direct the extinguishing efforts at that point.

(F) While one extinguisher is being used, other employes should bring up additional extinguishers so that they will be ready for instant use.

(G) Even after a fire has apparently been extinguished, keep the extinguisher ready so that it will be available for instant use should the fire break out again.

(H) Water should not be used on gasoline fires as it simply spreads the blazing gasoline. Use only standard company "Foam Type Extinguisher" on this type of fire.

(I) Except in exceptional cases where a fire is extinguished almost immediately, it is standard procedure in industry to notify the local professional fire department so that their own forces can be backed up with reserves in case the blaze gets out of hand. Municipal fire forces do not object to answering a call and finding that the fire has been extinguished.

How Are Most Fires Started?

(A) Usually by careless smoking habits such as tossing a cigarette butt or a lighted match into a waste paper container or by a burning cigarette falling from an ash tray onto an inflammable object such as a chair or rug.

(B) Defective or improper electrical wiring.

(C) Sparks or flames igniting gasoline vapors, paints, varnish, or alcohol anti-freeze solutions.

(D) Combustion — oily or paint soaked rags left carelessly lying around.

(E) Building men should double check when emptying contents of ash trays into other containers to make certain that all discarded matches, cigarette butts, etc., are completely extinguished.

Be Prepared In Case Of Fire

(A) In order that a fire, if it does start, may be effectively and efficiently combatted, we should be familiar with the location of the fire fighting equipment on company premises and how to use it.

(B) Know how to notify the fire department. If you use a fire alarm box have someone stay at the box to direct the firemen when they arrive.

(C) Know the location of the nearest fire alarm box.

(D) Rehearse in your own mind what you would do in the event a fire were to break out in the building in which you work.

(E) Each employe should be familiar with the locations of fire exists so that prompt exit may be made in case of an emergency. In the event of a fire walk do not run to the nearest exit.

(F) Snow and ice shall be removed from fire towers, balconies, fire escapes, sidewalks and steps as soon as practicable.

Types Of Fire Extinguishers

(A) *Water Type*: Must be inverted and banged on the floor to start. (Be sure to direct the hose at the base of the fire before this is done). It is used on burning paper, wood, or cloth. It may also be used on central office equipment but only as a last resort if the CO_2 type fails to do the job.

(B) *Soda-Acid Type*: Need only be inverted to start. (Direct hose at fire before starting.) Should not be used on telephone equipment. Do not use the water type or soda-acid type extinguisher on flaming liquid.

(C) *Foam Type*: For use on burning liquids. Need only be inverted to start. Direct foam just slightly ahead of the fire. The foam forms a blanket over the burning liquid to keep out the air.

(D) *CO_2 Type (Carbon Dioxide)*: Large type CO_2 units (Located in company garages) are used in an upright position. When the trigger at the top of the extinguisher is depressed, the gas is released. Some CO_2 types have a wheel valve instead of a trigger. Asbestos gloves are used with this type to smother glowing embers or burning telephone wires in central offices following the use of the extinguisher. Always use this type extinguisher on electrical equipment. It is also effective on small liquid fires. It is important that every employe know the location of the fire extinguisher in the area where he or she may be working.

Never return a used fire extinguisher to its bracket. It gives a false sense of protection.—(*From New Jersey Bell*)

Hand Soldering & Brazing

HAND soldering and Brazing — one of the oldest and most common industrial operations — presents hazards many workers and do-it-yourselfers are unfamiliar with.

That's the warning of the National Safety Council, which points out that if conditions or practices in hand soldering and brazing aren't controlled properly, many hazards may result.

That and more general information is given in recent Council Data Sheet D-445, "Hand Soldering and Brazing." Reviewed by safety engineers — all experts in the field — the seven-page publication presents up-to-date information that may be applied in both industry and the home.

Use of gas-heated soldering irons presents a greater lead hazard, usually, than electric irons, since larger amounts of solder are heated. Other possible dangers of gas-heated irons are exposure to carbon monoxide from poor combustion, and gas poisoning from leaks.

The greatest health hazards with solders, though, are created by cadmium, zinc, antimony and fluorides. Care should be taken to prevent ingestion of such toxic materials and breathing fumes containing them. For this reason, lunches should not be eaten or stored near soldering operations.

The Council data sheet further stresses the importance of good (that is, continuous, not occasional) housekeeping.

Briefly, here are suggestions it gives for proper safety control in soldering operations:

(1) Prevent ingestion of toxic materials. Good personal hygiene is a necessity.

(2) Workers should be given annual physical examinations.

(3) Protective clothing should be worn.

(4) Equipment should be maintained and soldering areas kept clean.

(5) Precautions should be taken to prevent fires.

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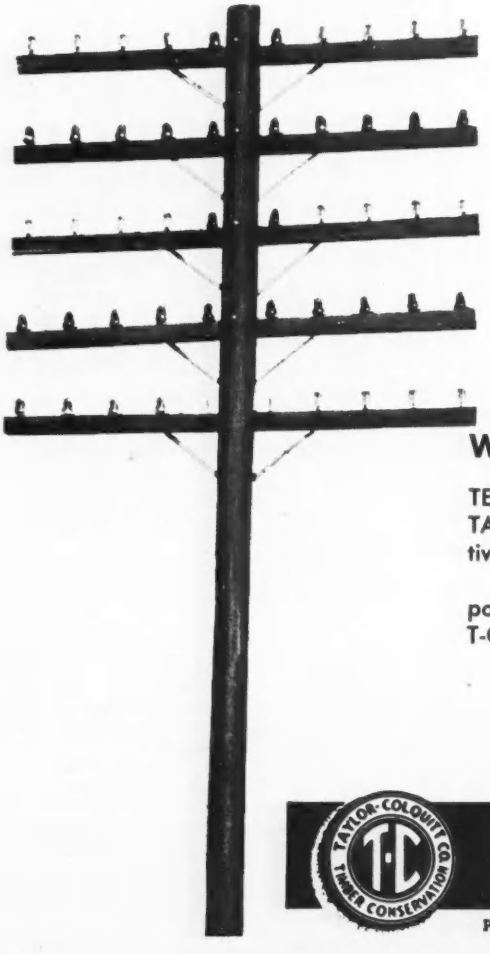

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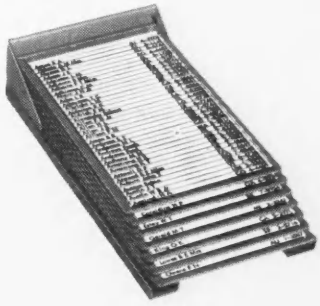
The last Flexoline strip on the front of each frame is *visible* . . . listings may be added or changed without concern for label changing or other indexing detail. The expansion factor within each side of each frame is filled with blank Flexoline strips until each space is wanted for an actual listing.

Hardt Richard W LI 4-0002
Harris Maurice R TA 4-4341
Harris William T BA 4-2241
Helms A Franklin MO 5-7910
Henderson Matthew JA 5-5353
Hill Denny M Rev KR 7-7158
Hodgman Stewart LI 7-0618
Hollowell W T O&E Engrg 1763
Holman Howard H MA 7-3692
Hough W G ME 4-2650
Hull James L GR 3-1130
Iliad Louis S EX 4-9006
Imel George M Admin 5460
Ingalls Bernard RO 9-5422
Inson Daniel H EX 2-6221
Inscoe W Edward UN 4-1693
Irvin J W TU 6-2351
Ives Thomas K EM 9-2192
Jackson Albert H AD 4-9113
Jackson Paul O WA 3-5056
Jacobs Wiley W LA 2-9809
Jaffe Louis I AM 5-5943
James Ernest L PE 3-6795
James Leroy JE 3-1603
Jenkins Wright Wm CA 6-8150
Jergens Jack R LE 3-0542
Johns Nicholas DI 4-1158
Johnson C Lloyd O&E Plt 8430
Johnson Ralph W EX 7-9973
Johnson Wilson AD 2-5311
Jones Melvin CO 4-8275
Jones Reginald MA 3-3147
Justis Marshall TI 5-1375
Kaplan Milton H EX 5-1726
Kennon B F Pers Pet 3759
King Robert T HO 3-4340
Kissell Vernon C HU 4-1342
Knight L Stanley RA 7-5650
Kyle John H MA 4-5906
Lamb Donald K UN 3-7086
Lansdale Howard HO 2-9152
LaRue Ralph S TU 8-3254
Lawrence R Wesley EX 4-5491
Lester Robert B O&E Traf 7054
Little Clyde M UN 4-1154
Lowe Linwood L JE 5-6178
Luck Paul RA 5-7231
Lyon Franklin M LE 3-2693
Pollard Herman NA 8-4366
Richman Paul UN 8-0840
Usher Joseph A AD 7-6800

Frames are aluminum and are removable. Non-skid corrugated rubber strips are mounted on the underside of the base, which is of "bridge" construction for straddling divider strips on switchboards. (When specified, flat base units will be supplied, with over-all corrugated rubber attached to bottom.) Flexoline strips are furnished in sheets of 42 strips per sheet, pre-scored horizontally to the 1/8" standard typewriter space. Supply of Flexoline is included to completely establish the reference listings and accommodate listing changes.

FOUR SIZES

7 frame units with 390 or 490 listings capacity
13 frame units with 712 or 890 listings capacity



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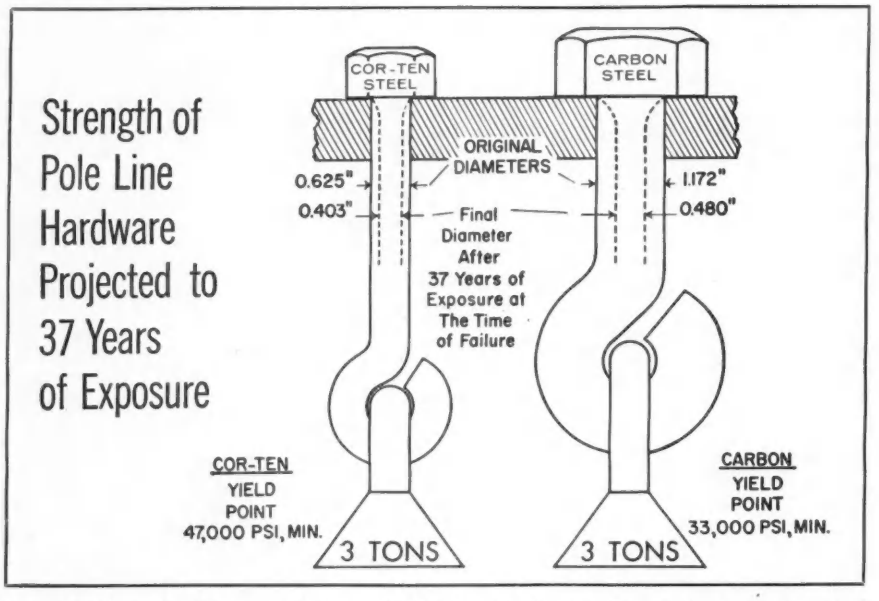
Why USS COR-TEN Steel has two life-prolonging advantages over carbon steel hardware

- Greater resistance to atmospheric corrosion
- 50% higher yield point



A graphic illustration of the superiority of USS Cor-Ten Steel over carbon steel. For a carbon steel bolt to last as long as a Cor-Ten Steel bolt under like load and atmospheric conditions, the carbon bolt would have to have nearly twice the diameter of the Cor-Ten bolt.

One of the main factors in the high cost of pole line maintenance has been the necessity of replacing all carbon steel hardware one, two or more times during the life of a treated utility pole. Due to the cost of hardware installation, even though *only a few* pieces were corroded to the point of failure, economics demanded that the crew replace *all* hardware simultaneously — rather than make several subsequent trips to the pole to replace the balance of the hardware. The answer to this costly procedure was to find an economical material that could withstand the ravages of corrosive atmospheres for the full life of a pressure-creosoted pole.

History of Success

In searching for such a material, manufacturers of pole line hardware hit upon an inexpensive steel that had a 20-year record for successfully withstanding corrosive atmospheres—USS COR-TEN High-Strength Low-Alloy Steel. Most of the initial applications of COR-TEN Steel were in railroad freight cars that were subject not only to the abrasive action of coke, coal and ore, but to the corrosive atmosphere around marine and industrial centers as well. Why were these cars of COR-TEN Steel still in service after fifteen and twenty years of punishment? Because of the great strength and high resistance to atmospheric corrosion of COR-TEN Steel.

Protective Oxide Film

USS COR-TEN Steel has two great advantages over structural carbon steel—particularly in corrosive atmospheres. First, its resistance to atmospheric corrosion is *four to six times* that of plain carbon steel. Here's how this pays off: Visualize two pieces of pole line hardware, one of carbon steel, the other of USS COR-TEN High-Strength Low-Alloy Steel. Both have a standard zinc coating for initial protection. When the galvanized coating wears away, the base metal is naturally subject to corrosion. This is when COR-TEN Steel begins to show its real worth. The initial coating of oxide that forms on COR-TEN Steel is smooth and tightly adhering. This smooth coating of oxide effectively inhibits further penetration of the corrosive atmosphere. The carbon steel, on the other hand, forms a loose, porous film of oxide that is subject to progressive penetration by the corrosive atmosphere. And it is this constant attack on the base metal that leads to rapid failure of the carbon steel hardware.

Greater Strength, Too

The second distinct advantage in using COR-TEN Steel for pole line hardware is its strength advantage over carbon steel. The yield point of COR-TEN Steel is *50% higher* than that of carbon steel. Here's how this affects service life: Even if COR-TEN Steel corroded as rapidly as carbon steel—*which it does not*—the greater strength of COR-TEN Steel means that it is still capable of many years' service after carbon steel hardware, corroded to exactly the same extent, has failed. The combination of greater resistance to atmospheric corrosion and its 50% higher yield point means that USS COR-TEN High-Strength Steel Pole Line Hardware can confidently be expected to last as long as the treated pole that supports it!

Utility Savings

It would be impossible, in this space, to point out the savings that each individual utility company would enjoy through use of COR-TEN Steel hardware. Perhaps this simple illustration can help you draw your own comparison. A maintenance crew normally consists of at least two men. Wage rates are approaching $3.00 per hour in many parts of the country. Even the simplest replacement consumes a minimum of two hours of a crew's time—to which must be added the cost of the new hardware. Simple multiplication will point out the rather staggering cost of having a crew service a pole several times over a period of fifteen or twenty years. With that frighteningly high cost figure in mind, think of COR-TEN Steel hardware . . . strong and corrosion-resistant enough to stay in service, day-in-day-out, for the full life of a pressure-creosoted pole. It makes good sense to investigate the benefits of hardware made with USS COR-TEN Steel.

More Information

Complete information on this longer-lasting hardware is contained in "USS COR-TEN Steel Pole Line Hardware." We will be glad to send you this book. Or, if you prefer, we will furnish a list of manufacturers producing pole line hardware from USS COR-TEN High-Strength Steel. Just write to United States Steel Corporation, Room 2801, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

"USS" and "COR-TEN" are registered trademarks of United States Steel Corporation.

EDITORIAL

"Not By Technology Alone"

SOMEONE ONCE said, "*Progress cannot be achieved by technology alone . . . Besides genius in the laboratory you must have the financial strength to make the necessary long-term commitments in plant and personnel.*"

That statement pounced into our thoughts last month as we looked back over the ten amazing years just past and realized the rate of the telephone industry's growth and the swiftness with which far reaching changes have taken place.

Actually the whole nature and concept of communications has undergone a profound change. From a substitute for word-of-mouth contact, the telephone industry has evolved into a kind of gigantic central nervous system.

We well know the great strides forward in communications have required extraordinary scientific effort.

Also, we know that in order to meet constant demands for more service the telephone industry has had to expand its plants and facilities and cope with a cost phenomenon which is inherent in the telephone business — a phenomenon that arises from the fact that as the number of telephones increase, each one to be interconnected with all others, the amount of physical plant needed multiplies in something like geometrical proportions.

Despite this cost factor, the records prove that expansion and improvement projects of many telephone companies have moved along at a fast pace although earnings were often short of dividend requirements and surpluses were being badly depleted.

So far what has been accomplished has been excellent. But what about tomorrow? As we see it there are two answers to that question:

(1) *If the company has the continued earnings and credit for the new capital it needs then it will be free to go ahead and make the necessary long term commitments in plant and personnel.*

(2) *If the company does not have the financial strength it will sooner or later be compelled to make expedient decisions and take the short range view.*

Right now many companies are facing up to such decisions. Looking ahead they see vast opportunities for providing even greater speed and efficiency for their subscribers. To make these opportunities into realities will require billions of dollars in new capital, and to get this money the telephone industry will need credit as few industries have ever needed it before.

And this means, of course, that telephone companies will have to convince the investor that the telephone industry has a good future and that he can expect safety and a good return for his dollar. If the companies which make up America's telephone industry have the earnings to do this, then they can go ahead with long term commitments to improve service.

But if they do not have the earnings they may be forced to adopt the short term expedients.

As we see it the problem is serious. The industry has more than doubled its physical capacity over the past decade. Its prices and earnings are regulated by public authority. It wants to go ahead with further expansion and improvements but many of its companies can't earn *now on what their property is worth but only on what it cost years ago with no allowance made for the decreased value of the dollar.*

It seems to us that if subscribers who want the best are to get the best — *nationwide dialing, expanded area local service, and all the new developments still in the laboratory stage* — someday, somewhere along the way, somebody is going to have to face up to the fact that in the end a subscriber gets only the kind of service he is willing to pay for.

We well know that facing up to that fact is not going to be easy. Nobody likes to pay more for something when he thinks he can get it for less. But we are convinced that the customer will pay less in the long run and will have better service if his company is permitted earnings adequate for financial safety.

We are also convinced that if such earnings are not permitted, particularly during times of great general prosperity, service will inevitably deteriorate.

After all, "progress cannot be achieved by technology alone." Progress must be paid for. And its been our experience you can't take in a ten-buck show if you've only got a dollar to spend!

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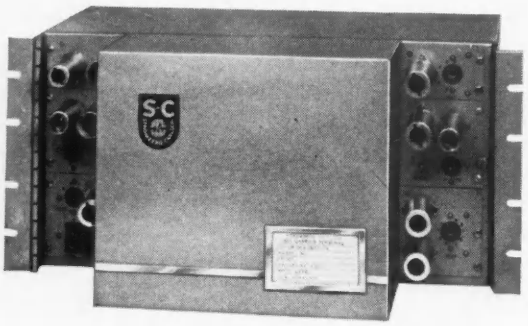

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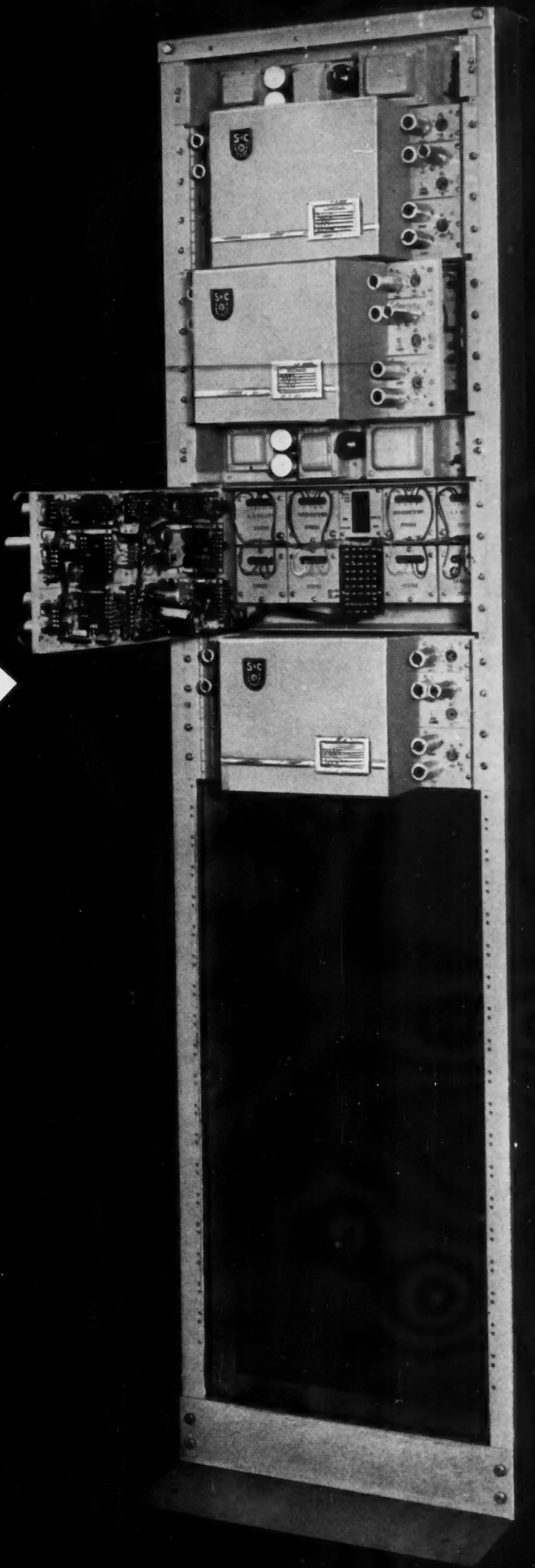

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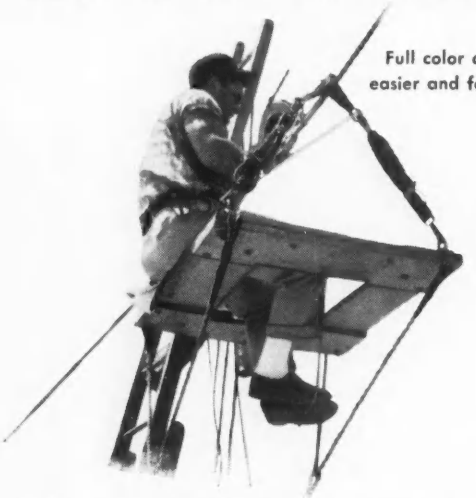

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Tonics For Small Exchanges

By J. T. NAYLOR*

The author does not claim the discovery of a panacea or "pat" answer for the small exchange. The magnitude of the results produced by the "tonics" he suggests will be directly proportional to the "sweat" put into such items as wise engineering, exchange rates, proper participation in toll revenues, and preserving the best financial structure.

Scope of Subject

THE TITLE of this paper does not lend itself to flag waving or self-adulation for our industry. It has to do with cold and practical problems — where we stand today and what to do about it. This discussion is about small exchanges generally and not necessarily about small companies. Let us grant the small company operator the privilege of talking for himself.

I should like to define the extent of the small exchange problem industrywide. In approaching these questions, and for purposes which will evolve later, it may also be enlightening to think in terms of the scope of manual development throughout the country as contrasted to dial operation. There is a substantial correlation between manual development and the small exchanges throughout the industry.

In the Independent segment of the business 85.7 per cent of some 4,800 exchanges reporting to the USITA have fewer than 1,000 stations; just short of 40 per cent of all Independent exchanges reported were operating on a manual basis. The average size of the 1,925 Independent manual exchanges serving 1,765,797 telephones was 920 telephones per exchange.

According to latest figures released by the Federal Communications Commission the manual development in the Bell System at the end of 1955 totalled 6,161,989 telephones in 1,991 communities; the average station development in these communities was 3,100 stations. The overall picture throughout the country displays 3,916 communities being served on a manual basis and having a total station development of 7,927,786.

Irrespective, therefore, of the technological strides and progress general statistics for the United States might show for telephone development, it is apparent that in terms of numbers of communities and telephones affected the problem of producing universal mechanized telephone service in this country is equivalent in size to the total telephone development in the United Kingdom and is double any of the nearest numerical rivals of Canada, Germany, France, or Japan. Small exchange and mechanization issues are common and universal to the entire business in this country.

Mr. Naylor is president, United Telephone Companies, Kansas City, Mo.

"THE AMERICAN economy and the appetite for new and better grades of service are everything else except static."

General Problem Sources

AS SOME of us see it, the small exchange issues stem from three principal roots which have become institutions in our society. The first of these has been the progressive development and maturity of the tradition and ideal of providing universal 24-hour service every place throughout the country irrespective of the size and nature of community involved. We have come to take this responsibility for granted; it is a ground rule by which we all perform without compromising with costs.

The second major influence in a three-pronged problem is that of the growing idea that wage levels and the cost of labor should be nationalized and, like the ideal of 24-hour telephone service, should be mounted on an arbitrary floor without regard for localized balance between costs of living or costs of other products and services. We must anticipate a universal wage floor by precedent if not actually by law.

This idealogical duet of 24-hour switchboard attendance and a universal wage floor harmonizes in a way which is defiant of normal economic laws. Nevertheless, they are shaping up to be the "Rock and Roll" of our business — all to the accompaniment of an eroding currency and escalating costs.

The third influence falls in the financing sphere. It

is perhaps not quite as absolute as the first two, embracing the broad question of acquiring financial resources to develop the small exchange. This factor is a complex issue of credit, desirable capital structures, cost of money, and ownership objectives in general.

Technical Programming

IN THE interest of both time and emphasis, I should like to take for granted and leave for the observations of others certain aspects of small exchange economy which are vitally important but can better be covered at other times.

I have reference to the technical and engineering resources available, including mechanization of all varieties for both local and toll service. Likewise, long span facilities, subscriber line carrier and even radio tech-

"THE SMALL exchange operator should make a special endeavor to study and understand both current financial conditions affecting the business and the financial environment toward which any step in financing leads."

niques are high on the list of priorities for study in minimizing the annual charges of providing service. This searching out of superior engineering and technical solutions is an obvious and partial answer for every small exchange.

On this point I should like simply to suggest that the long view and sound economy be sought out in the technical specifications for new and replacement plant. Often times a low first cost to "go dial" is an illusion leading to maximum grief and maximum costs later.

Producing minimum annual operating costs over the long pull is the only proper objective. This means more than simply mechanizing in the broad sense; it is a question of *how* we do it. One misleading and careless statistical measurement that the industry has been prone to place much faith in of recent years is the percentage of dial development in a given company.

This may or may not be a healthy indication. Many companies with high percentages of dial development may actually be in worse shape than those companies which still have the job to do. Terminal-per-line equipment and unorthodox numbering plans are often forerunners of uneconomic new investments, premature replacements, and a variety of expensive changes which produce no offsetting revenue increase inducements or economies. It is much worse to have to re-do an expensive but improper job than to be starting from scratch and engineering the conversions properly and with foresight. Your suppliers and your own well-informed technical judgment and "know-how" are your sources of strength in this.

Exchange Revenues

SOURCES of adequate revenue for the small exchange and the healthy constitution of capital structures for small exchange development are just as important as the technical. To a great extent these are related. In discussing them I should like to base my observations on the foundations summarized above. Namely: That we must try to protect the ideal of 24-hour and universal telephone service, and second, that sooner or later, and probably sooner, the universal minimum wage will be here and here to stay. I assume that none of us wish to imitate the Post Office Department in its recent service curtailments: that would seem to be only a "last ditch" answer. The positive approach is recommended in facing up to these issues, rather than cutting corners.

On the sources of revenue question some of our remarks may seem trite but I believe there is a new emphasis required and that it is high time that the spotlight be cast on certain basic principles from which we have either been diverted or are too timid to explore.

While rate levels can theoretically reach the point of diminishing returns the very idea is weird in these times Public utility rate levels have been one of the few brakes on the inflationary spiral. So long as a family can buy a whole month of the stuff for the cost of one tank of gasoline or one good steak dinner there need be no loss of sleep over the public interest. I would like to recommend comparison of value received for the prices paid and particularly price trends of the past 10 years across the grocery or hardware or clothing counter as against telephone service in modest sized communities.

Regulatory maturity is being reached in some locations and realism and service consciousness are displacing political preoccupation and the tendency to measure regulatory talent on its ability to oppress public service.

You are probably familiar with some recent rate decisions rejecting outdated rule of thumb formulas and realistically fixing rates on the basis of actual financial needs to maintain and expand required services. There have been other signs that there might be, under the influence of recent cost trends, a renaissance of regulatory thinking which will enable public utilities to take their proper place without a continual defensive struggle in the current economic environment of the country.

It does not take a financial expert or a Doctor of Philosophy to compute that if 50 percent of a capital structure is debt at a reasonable going rate of 5 percent and the remaining 50 percent is ownership at 10 percent to cover both the reasonable payout on investments and retained capital for growth, the earnings requirement is 7½ percent.

This is a minimum calculation where growth is involved as it does not recognize the time lag between securing capital and getting the resultant plant into productive service. As for the reasonableness of such figures, we need go no further than the record of major companies in their financing of the past year. Here in the Northwest on a recent $12-million dollar bond issue for a public utility with as high credit rating as they come, the interest rate was 5⅜ percent.

Research on a proper return for equity capital need be only as elaborate as cursory reading of experience

data in the sale of new securities as reported in the trade press and newspapers. During March and April of this year there were 13 substantial offerings of power and gas common shares; no notable telephone offerings were recorded for these months but by and large it is conclusive that power and gas investments usually run slightly more popular and are priced at an average of one-half point better than telephone on a price to earnings ratio basis.

Of the thirteen separate offerings in March and April, the average earnings to price ratio was 8.55 percent with a high of 11.49 percent and a low of 6.99 percent. This reflects actual experience in the market, requires no theorizing or assumptions, has no margin for the idle capital interval nor liberality of any description.

The cold circumstances under which public utilities must undertake financial and service growth emblazon the fact that a 7½ percent rate of return in these days is slicing to the bone. Anyone who has the temerity of thinking in terms of 6 or even 6½ — yes, or even 7 percent should have either his motives or his faculties placed under scrutiny. It is not necessary to go farther than the nearest newsstand to be that well informed.

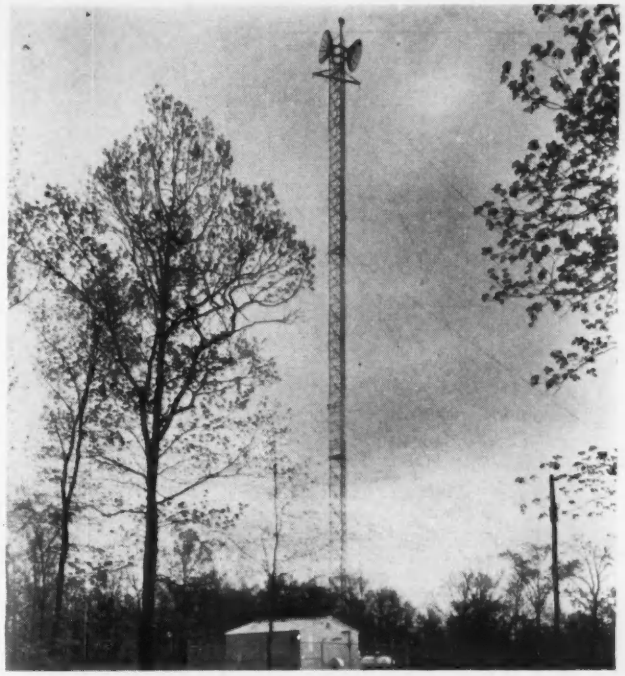
Whether it requires education, persuasion, or litigation, all of these facilities, as needed, should be brought aggressively into full play in bringing rate levels up to the actual cost demands of the business. This, of course, means looking well to the internal operations, including the adequacy of management, supervisory, and employe wages in the brackets above the minimum. It is not fair to our public duty nor to the investors in our business to cut corners or engage in "shoestring" operations.

We are all more or less familiar with the clerical acrobatics which can be brought to bear to obscure the simple arithmetic in this question of a reasonable rate of earnings. One of the common ones, wearing long gray whiskers, is the clerkish view that the existing balance sheet and past history of a company establish the limitations within which rates should be fixed. It has also became pharisaical to contend that original cost, historical cost, fair value or what have you are the great anchorages of public interest.

The patriarchs of rate science also seem once to have found a halo around the figure 6 percent. Today, those premises when applied have the same credentials as advising a man with a broken leg to get out on the street and walk because he was well yesterday. It is today's economic scene and tomorrow in which our companies must live and serve.

It isn't necessary to disregard a company's balance sheet and records as they stand to be realistic about the current problems of raising money and maintaining proper service levels under the actual financial, wage and commodity markets with which we are confronted. The American economy and the appetite for new and better grades of service are everything else except static. The corollary fuels and wherewithal of progress will not evolve from static and outmoded concepts.

To secure recognition of these circumstances is a tough job indeed in many locations as our laws are variously constituted, used and abused. The problem is reminiscent of my first sophomoric day in a law class. The professor started out unsmilingly and in earnest with this remark: "Now get justice and logic out of your heads; we are here to study law written by lawyers and for the primary purpose of making work for lawyers. Anyone who tries to come up with answers based on simple right or wrong is dead sure to flunk this course."



"LONG SPAN facilities, subscriber line carrier, and radio techniques are high on the list of priorities for study in minimizing the annual charges of providing service."

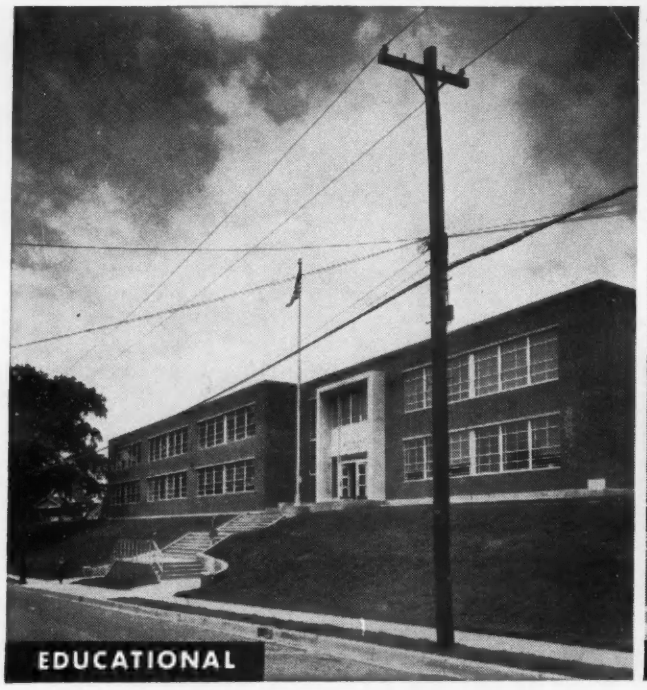
My recommendation can only be that you bore in tenaciously for the rates you need. With perseverance and the proper facts, chances are that you can successfully wade through the swamps and jungles of mystery that lawyers, accountants, engineers, and political demagogues have built to obscure the simplicity and integrity of the multiplication tables.

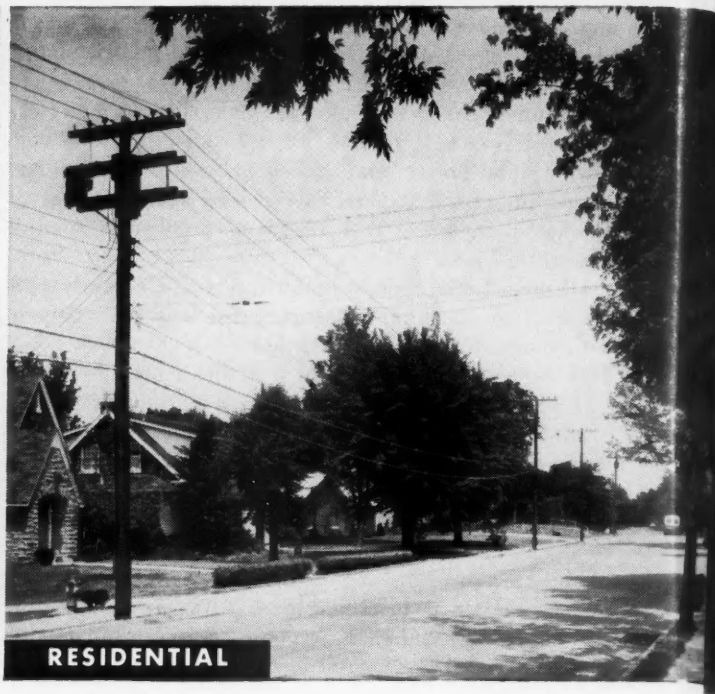
"Performance Coverage" For The Small Exchange

IN 1942 AND '43 a long-standing question on fundamental exchange and toll rate philosophy was resolved wherein the station-to-station principle displaced the old board-to-board ideas. This issue was a grass roots and fundamental one in our business. Although it seems obvious today that subscriber station plant and all exchange facilities must be credited as instrumentalities in providing toll service, most of us can remember the argument and strife which ensued just trying to prove this simple point.

I believe there is another equally fundamental principle still inadequately reflected in telephone revenue structures and which deserves aggressive and persevering action. I have reference to the principle of statewide revenue measurements as contrasted to the individual exchange approach.

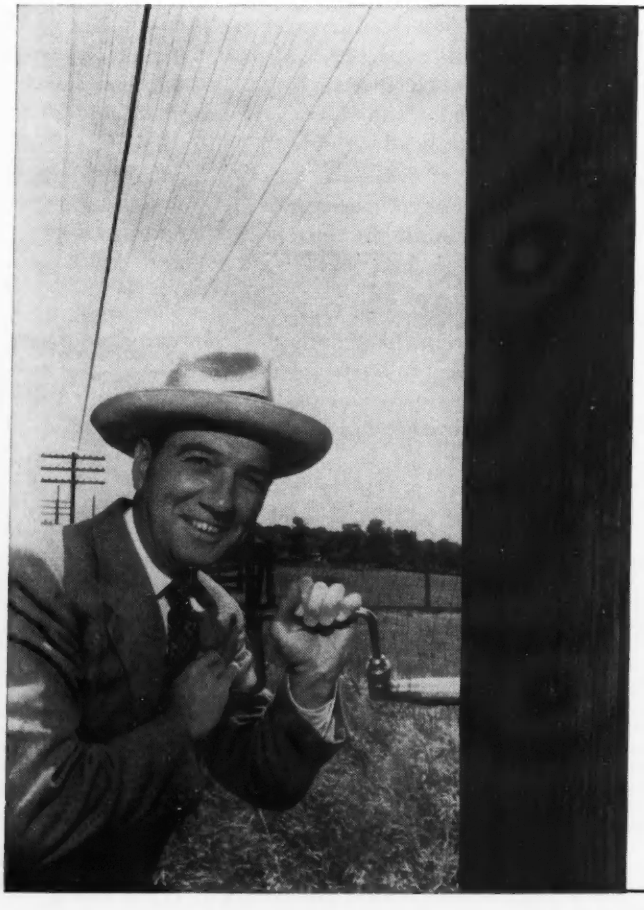
It has been almost universally acknowledged that exchange-by-exchange rate fixing on a cost of service basis is unfair and discriminatory as between communities and mathematically next to impossible in the results that evolve. It likewise has certain impossible mechanics in





To provide better service . . .

The Capital City Telephone Company

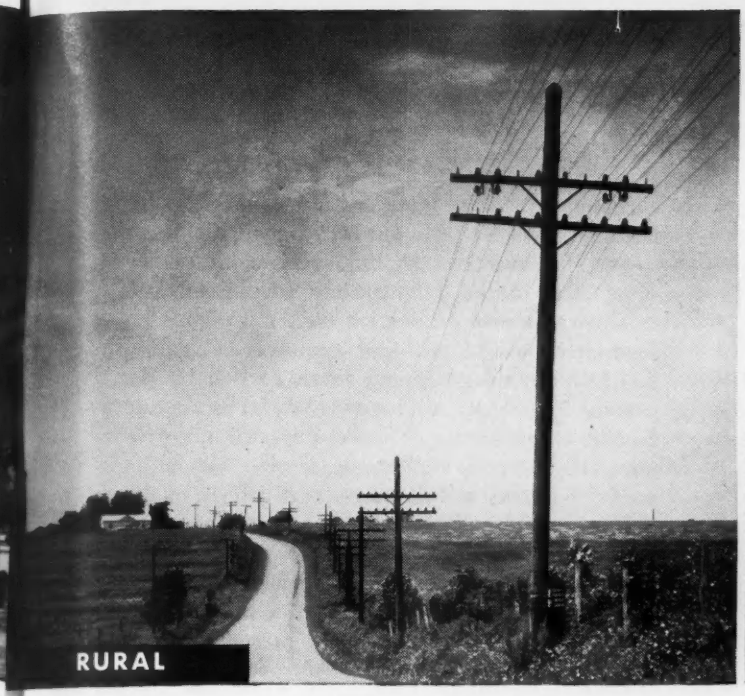


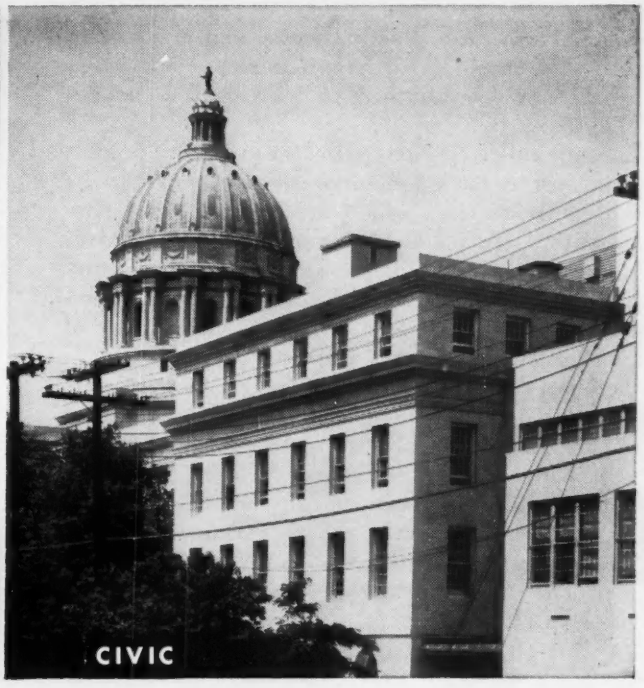
"As we grow, the majority of the poles we install are pressure-creosoted poles,"

states M. S. Bodine, Chief Engineer

Mr. Bodine gives good, sound reasons for his company's choice: "The terrain around here is hilly and rugged and the roads follow the ridges. Also, in many of our pole settings, we hit solid rock. Sometimes we have to cut into rock to put poles in place.

"Therefore, our cost of construction per mile can run from $600.00 to $1,400.00. As a consequence, we must use poles that are exceptionally durable. The majority of the poles we buy are pressure-creosoted poles. They are the best and most durable poles we can find."





has its finger on the capital's pulse

The Capital City Telephone Company is located in Jefferson City—the capital of Missouri. In the area served by this company, there has been considerable shifting of the population in recent years. Many townspeople have become ex-urbanites. But here's the unusual part: just about as many people have moved from farms to the city.

In order to *anticipate* population shifts and other important trends, The Capital City Telephone Company keeps in close touch with community affairs. Every year, at least one company executive serves on the Industrial Development Committee of the Chamber of Commerce. Management personnel are also members of many other leading civic organizations in the community.

This close contact enables The Capital City Telephone Company to give subscribers the service they need. For example, in 1955 alone, 500 new connector terminals and 400 additional lines were installed in the central office. And the latest subscriber figures indicate a total of 14,260 stations—*all dial-operated*—as compared with 3,788 company-owned telephones in use one year after the company was granted a charter in 1925.

If you would like more information on pressure-creosoted utility poles, and the way they can enable you to save money and establish better service for your utility, just get in touch with the nearest Chemical Sales Office of United States Steel or write to United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

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that capital structures, financial costs, and many other aspects of a corporate or proprietorship composition cannot reliably be prorated to individual exchanges and toll lines.

Statewide rate fixing recognizes an averaging process wherein certain rates and services compensate for the cost of other services which are in themselves non-compensatory. To put it very bluntly, certain services subsidize others; certain exchanges subsidize other exchanges. I personally believe such practices to be perfectly all right and essential. It is an inherent part of making telephone service a universal convenience.

There is a conspiracy of facts, however, that presently renders this principal inoperative and which penalizes those companies which are preponderantly composed of small exchanges without facility for the subsidy inherent in companywide and statewide rate making.

Drastic though this may sound, I believe it is incumbent upon the industry in general to find ways and means for the principle of statewide revenue resources to make up cost differences — call it subsidize if you will — for all small exchanges even across corporate lines. Let's use the term "performance coverage" to sweeten the subsidy feature, just as "area coverage" is a camouflage for a less justifiable subsidy.

We admit to a glib tendency in the industry to fasten convenient labels to the various operational and regulatory doctrines which are promulgated from time to time. We cover a lot of complicated and intricate problems with such terms as "Fair Value," "Station-to-Station," "Phoenix Plan," "Charleston Plan," "Area Coverage," and a host of other quick road markers.

All of these expressions actually embrace great volumes of complex calculations and data and perhaps much discretionary judgment. Likewise, the expression "performance coverage" which I have used for convenience extends to a multitude of considerations. I believe these considerations to be deserving of top priority in industry effort and for a moment I should like to be more specific.

A partial inventory of absolute performance standards and some of the problems which they pose are these:

(1) The same taxes and responsibilities to government which impact upon the big exchanges also carve into the small ones.

(2) They are expected to be promptly available to give service at 2 A. M., just as in the big cities.

(3) Their rates are judged to a measurable extent by comparisons with rates of similar sized neighboring exchanges; no questions are asked about the degree to which such comparative rates may be subsidized or whether a neighboring exchange is in itself solvent or "losing its shirt." Large system rate grouping is becoming an influential yardstick.

(4) There is probably merit in the principle that the big city users and the toll users should pay a little extra on their telephone bills just to have all the telephones in the country available to them at all hours of the day and night. It is probably exaggeration to call these extra increments a genuine subsidy, as the big city user does get some benefit through universal availability. But this principle fails for those of you who do not have the city user for an assist.

(5) Wage minimums discriminate against the small exchange; revenue levels in most of the Independent industry are out of joint with wage trends. The most recent 1956 year-end statistics show that in the Bell System investment per employe was only 16 percent higher than the Independents — $26,900 per employe as against $23,230, but gross revenue levels of Bell are 41 percent higher per employe — $9,150 as against $6,482. Perpetuating such disparity will not produce the uniform high grade service which the public demands and deserves, particularly in the thousands of small communities throughout the country. Granting that revenues to cover fixed charges and maintenance materials should be 16 percent higher for Bell the difference between 16 percent and 41 percent (the present revenue advantage) requires either improved Independent revenue levels or a stingy wage and manpower policy with its attendant inadequate handling of service responsibilities. As stated before, proper exchange rate improvements may go a substantial part of the way and are the first order of business. To that extent each small exchange operator is "on his own" to go after the exchange income he needs. The toll business should carry its fair share as well and that may be an industry challenge with broad implications.

(6) Finally, I believe that no one in our business wishes to be responsible for paddling against the current of progress in living standards. There are no longer any "hick towns" in America. Radio, television, and highways have seen to that. Good, high grade telephone service just no longer possesses an address; it belongs in every community we serve and it is up to us to make delivery.

I am sure that we all have the same purpose — to do a "bang up" service job. Until we find adequate ways and means of measuring and producing a uniformity of principle in providing the resources to do the job, however, we should be sensitive to a degree of failure.

Toll Revenues

IN THE preceding remarks I have given much credit to companywide and statewide revenue measurement as an aid to performance coverage, as far as it goes. This principle, simply stated, asserts that there should be no "soft spots" in a single company's armor and that those exchanges and services producing healthy results should to a reasonable extent carry and absorb those weak and non-profitable operations which may, nevertheless, be equally essential for public accommodation. Such principles have not yet adequately infiltrated into the toll sphere of Independent operations, but they should.

The idea of separation cost studies is taking hold and is beginning to mature as a product of the station-to-station principles promulgated in Federal Communi-

cations Commission Dockets 6328 and 6468. Many of us believe that eventually such studies may be desirable and good in principle, but many of us also feel that to date neither the station-to-station principle nor separation study methods have been or can be properly applied.

Independent companies by and large have no voice in establishing toll rate levels, yet they are obliged to originate, terminate, and perhaps haul much toll traffic. To most of them toll separation formulas are useless and academic. It can be said with finality and assurance that there is no one who can say today *what* we have to separate or who can define this over-exercised word, "costs."

We have performed every calisthenics in the books in discussing costs except the one thing that would be genuinely useful — providing a simple, clean-cut and universally acceptable definition of the word. That is not easy. Everyone in the business squeals like a stuck pig when original or book costs are advocated, and properly so, because the concept is unrealistic and grossly discriminatory as between companies.

Fair value is a conglomerate of judgment factors and compromise on which no two people exactly agree. Reproduction costs are a hypothetical mystery on which the wholesale construction and piecemeal growth proponents can argue interminably. Prudent investment is nothing but a gilded label to disguise prejudices of some particular interest and to give dignity to hindsight and second guessing. When costs are mentioned today, we are being as obscure as the subjects of religion or politics; as a conversation piece and working tool costs are just as wastefully inconclusive.

By comparison with more advanced industries, such as the country's railroad systems, we are as yet in the toddling stage in properly formulizing the division of toll revenues. Probably the small exchange and the small company have a greater proportional stake in this issue than any other segment of the telephone industry.

The experience of the railroads is enlightening in several respects. Their period of private negotiations on the division of interline revenues culminated in the assumption of jurisdiction by the Interstate Commerce Commission in the late '30's.

Delays, disagreements, and general wrangling between the roads exhausted patience to the point that they were relieved of their autonomy in setting up their own basis for divisions. This experience might well become prophetic for our industry.

Further improvements in the art of transportation together with uniform performance coverage, stimulated by rather desperate competition, resulted in wiping out the arguments and mystery of cost disparities. A professional basis for interline divisions conceived in fundamentals rather than bickering was established.

Our industry can profit from this experience. In some respects the communications business differs from railroading in emphasis as between terminal and line haul functions; in many other respects railroading has its share of complications which are greater than in communications. A fair recognition of competitive conditions is one classic example. The sum and substance of this comparison with a sister industry is simply that they are 20 to 25 years more advanced in their understandings and their relationships.

The proposals which I shall now venture might constitute a major stride toward narrowing this gap and in effect help us replace our present "prize ring" with a genuine conference table having professional dedication on all sides to public service and to mutuality of purpose in toll divisions.

If you will assume with me that some truly effective competition with telephone toll service were to develop, as did trucking and the airways to challenge the railroads, how long then do you believe our industry could continue its immature, hand-wringing bickering on revenue divisions? Self protection would dictate the answer.

In this toll sphere of our business there does seem to be a seasonable answer to the challenge of performance coverage which not only displays equity and propriety in tune with our public responsibilities but which will also function as a major shift from the present complications in setting up cost studies toward much greater simplicity.

The suggestion is this: That uniform average costs over the latest 3 to 5 year period for comparable wage

"OFTEN A LOW first cost to 'go dial' is an illusion leading to grief and maximum costs later. Producing minimum annual operating costs over the long pull is the only proper objective."

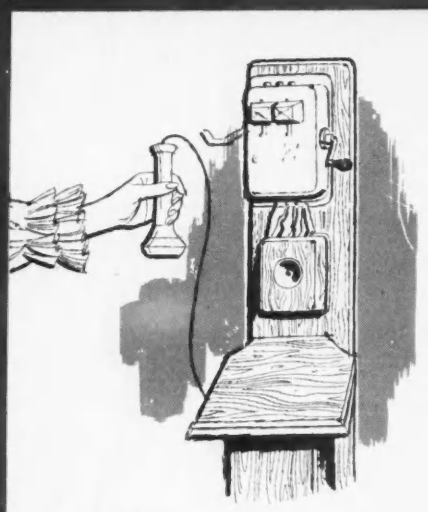
and property units be applied on a statewide basis for all telephone plant and wage levels concerned in toll separation studies.

To those who would say that corporate lines must remain a barrier to uniform cost pricing, I should like to recommend that they consider that uniform service standards, uniform wage trends, uniform costs of equipment, and uniformly high grade public service do not respect corporate lines. Until the scene is rounded out by establishing a uniform cost formula, the industry has a vulnerable "blind spot" in its defenses.

We have heard the extremists shout for 30 years on their theories in the business — the dreamers with their Utopian equalization of costs under a "postage stamp" rate theory on the one hand and the "dog-eat-dog" horse traders on the other. Sooner or later the answer will come and it will be a professional answer recognizing the hard facts of the business.

I recommend as one ingredient of a professional approach that we open our eyes to the demands of uniformly good service throughout the country by dividing tolls under uniform and current unit costs no matter who owns the plant.

There may be much weeping and gnashing of teeth at this revival of the doctrine of pricing equalization: but dial service itself was once heresy and the howls of dismay over station-to-station ideas are still ringing in



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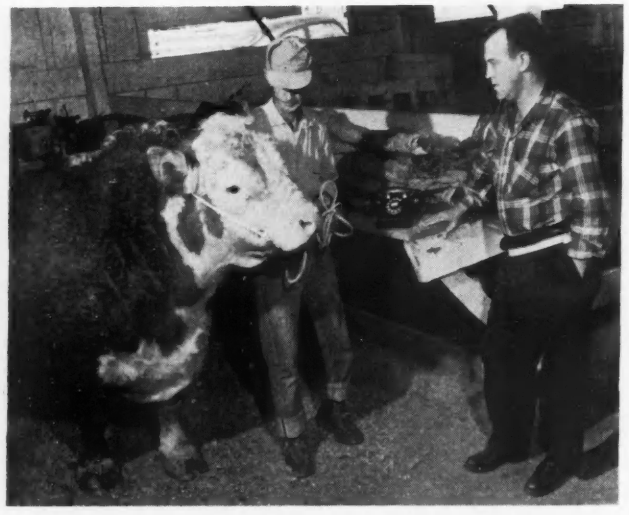
our ears. We are dealing with a coldly practical problem in accommodating the resident and businessman in the small town on a genuinely modern basis.

The purist for pin-pointed actual cost, whatever that is, has had to maintain an eloquent silence when differentials between business and residence rates have widened and when big-city rates have been "spiked" to keep operations going out at the remote crossroads. We believe that the purists' day is also expiring in this practical but inexact science of toll divisions.

The small exchange in particular and our industry in general will emerge with new pride when we seize upon the realism, simplicity, and speed of cost averaging by states for comparable plant specifications and wage classifications. The barriers of inadequate accounting records, historical frugality in expense policies and the



"THERE ARE no 'hick towns' in America. Radio, television, and highways have taken care of that. Good, high-grade telephone service no longer possesses an address: — It belongs in every community we serve and it is up to us to make delivery."

dates of plant erection will also give way to the genuine service and revenue needs of these times.

I will not impose further upon your time with the mathematics of this proposal or its harmony with federal and state regulatory obligations except to assert and invite argument on the point that it will hold water any way it is tested.

To be sure that these ideas are not misconstrued, however, I do wish to summarize briefly. We are not suggesting any "fuzzy" averaging approach such as costs per circuit mile, costs per telephone, or any vague or composite cost concepts. We are suggesting solely that current unit prices for exact plant specifications and employe assignments be averaged on a statewide basis for the entire industry — not Bell costs nor average Independent costs, but the average by states for the business. Actual present level of annual charges on actual plant in service must be recovered in their due proportion from the toll segment of the telephone business if our performance standards are to measure up.

Financial Composition

IN CONCLUSION, I would like to make mention of the financial problems of the small exchange. One of the most unhappy phrases in the business is the all-too-common reference to "*distress situations.*"

I feel that such situations are unnecessary in that where they occur, proper advice and foresight have been lacking internally in the companies involved and with direct reflection upon the rest of us in the business who have sat idly by while errors were in the making. Possibly some consolidations of small systems, possibly revisions of toll interconnections, or even outright sales and mergers are healthy influences if they are motivated by voluntary planning of the operators of the small systems and systems having a preponderance of small exchanges. Where such measures become compulsory as a last resort and are involuntary as a product of genuine distress something is wrong. In this we will all share some responsibility.

Such distress is invariably reflected in a financial dilemma where credit has been exhausted and the ability to take advantage of either technical improvements through new investments or financial readjustment has become impossible.

It seems to me that there is no company nor exchange too small in this business to make a special point to study and understand both current financial conditions affecting the business and the financial environment toward which any step in their financing leads.

The small exchange operator should be as alert as the management of larger exchanges and systems to resources and timing in the bond market and resources and timing in the equity market. He should be wary and know how to avoid resorting to abnormal fixed obligations either in excessive borrowings or perhaps excess preferred stocks. He should know better than to exhaust all of his financial margin before it is necessary either in debt or in soaking up of his local community popularity by selling his neighbors preferred stock just because it is the easy way.

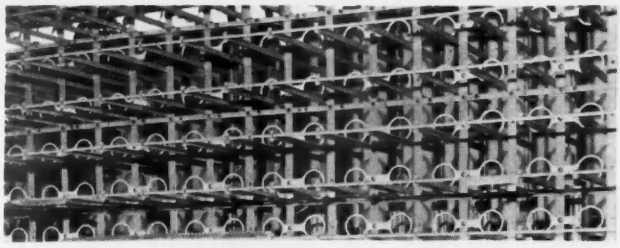
Up to a point these measures may be good and desirable but they can also be a most direct route to financial imprisonment. Maintaining a healthy financial balance means awareness that the easiest course often times is the worst one and a financial "spree" this year can very well be the makings of a real "hangover" next year or the years following.

It seems that the telephone associations might be helpful in an educational program to ourselves — none of us are too well versed to keep hammering these ideas back into our heads — just to keep us all conscious of what a healthy capital structure looks like.

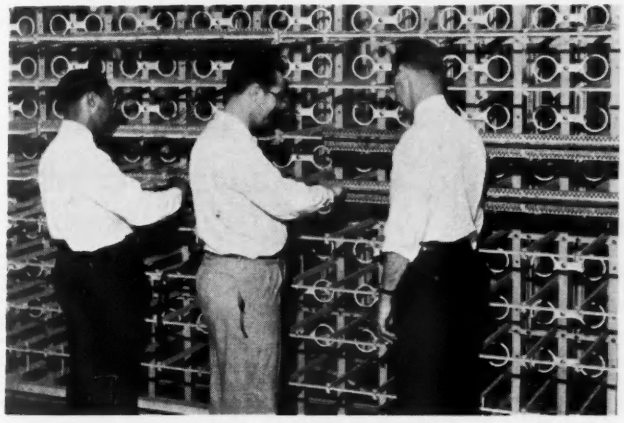
Conclusion

THERE IS NO panacea or "pat" answer for the small exchange. The "tonics" professed in my title are nothing but a large, and I trust well-directed, dose of hard work. Like everything else in the business, the result will be proportional to the sweat put into it.

Engineer wisely — hammer at exchange rates — push ahead on a consistent basis for a proper participation in toll revenues — use our sharpest pencils on preserving the best long range financial structure. Above all, since the quality of our public service and the ingenuity of private initiative itself are challenged, let us not be timid about any of these points. — *Adapted from paper presented at the* 1957 *convention of the Ore. & Wash. Independent Telephone Associations.*



TELEPHONE PLANT PLANNING PAYS OFF



THERE is only one right way to do a job, but there are many wrong ways. The odds are stacked against anyone guessing the correct way. To obtain the most satisfactory results the "correct way" must be carefully figured out

By T. DE WITT TALMAGE*

THE SOUTHWESTERN part of this country is credited with inspiring an anecdote which contains, along with its Texas-style humor, a moral that ought to be of interest to everyone desiring to do a better job.

The story involves a bustling Texan, oddly enough called "Tex." Tex had many irons in the fire, chief of which was the fact that he was a field representative for a progressive business concern — and business was booming!

Half way between Dallas and Fort Worth, Tex rushed into the Amon Carter airport terminal in a cloud of dust and shouted in the general direction of the ticket counter:

"Give me a ticket."

"Where to?" asked the clerk.

"Anywhere," quickly replied Tex. "I got business all over!"

Discovery and interpretation of this story's veiled moral, depending upon each reader's ingenuity, may range from *make hay while the sun shines* to *haste makes waste.*

Alert readers will quickly appreciate that there was nothing wrong with Tex's methods that a little old-fashioned planning would not correct, or at least improve.

Better planning is one of the most talked-of needs in business today. In fact the point has been reached in some companies where planning itself must be planned.[1]

Planning Plant Practices

PAST ISSUES of *Telephone Engineer and Management* have included numerous articles discussing aspects of the telephone business that benefit from continuous planning. In one such series of articles entitled, "Planning Plant Practices," many suggestions were summarized that, where applicable, result in smoother and more efficient operations of telephone organizations.

Contrary to the belief of some, planning does not necessarily have to be restricted to large projects, such as conversions from manual to dial telephone service. Any work involving the expenditure of money (labor or material or both) — if it is worthy of being done at all — justifies its due share of attention to make it fit best into the overall scheme of things.

Next to having at least a working knowledge of the principles and techniques of performing a job, a worker's most valuable stock in trade is the ability to organize his work in a systematic, orderly fashion.

Planning merely means thinking ahead. Most workers are expected, if not required, to think ahead — some further ahead than others. For example, a telephone central office equipment maintainer who starts out in the morning with the same broad, shotgun type of

**Educational Manager, Kellogg Switchboard & Supply Co. Chicago 58, Ill.*

[1] *"Company Planning Must be Planned!" Ralph M. Besse, "Dun's Review and Modern Industry," Vol. 69, No. 6, April, 1957. pp. 46-48, 62-64, 66, 68-69.*

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FAITHFUL SERVICE"
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GOOD ANY DAY
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Strowger Automatic is the only switching equipment in the world that has records even approaching 65 years of continuous performance in the field. During those years, the equipment has met every advance in telephony as easily as a scenery shift. Small wonder that so many telephone men choose Strowger! Visit a Strowger exchange and see for yourself. See the simplicity and flexibility of design that keeps Strowger in service after others are obsolete. Examine the craftsmanship and quality of construction. You'll know why Strowger has given 65 years of faithful service.

Your Automatic Electric representative is backed by 65 years of systems engineering and documented experience in all types of exchanges. Let him use his vast storehouse of knowledge to help solve your problems. Write: *Automatic Electric Sales Corporation, Northlake, Illinois. Or call FIllmore 5-7111.*

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GENERAL SYSTEM

planning of his day's work as Tex did may get something accomplished by nightfall but not necessarily at rock-bottom unit costs.

Likewise, a telephone installer who uses the same plan — or lack of plan — in carrying out his work will have to be very lucky to get his jobs satisfactorily completed on time or at a reasonable cost.

Then again, a telephone line repairman who attempts to perform his tasks on a similar hit-or-miss basis, is, regretably, doing his bit to keep plant maintenance costs higher than they would be otherwise.

It is not uncommon to hear the statement that there is only one right way to do each job, but there are many wrong ways. The odds, therefore, are stacked against anyone guessing the correct way. The most business-like way must be figured in each case to obtain the most satisfactory overall results.

Controlling Costs

ONE OF THE many secrets of successfully keeping costs in balance is getting the right materials, tools, and skilled manpower on the right spot at the right time. This is just as true for maintenance work as it is for construction work.

The delivery of standardized items purchased from recognized distributors normally presents no particular problem provided the material is ordered far enough in advance of its actual need so as to allow reasonable time for all concerned to do their part in handling the order.

The opportunities for making savings by careful *planning* of the *sequence of placing purchase orders* and the *coordinating of delivery schedules* are many and interesting.

A completely indexed listing of reliable sources of telephone equipment, materials, supplies, and tools will be found in Telephone Engineer's 22nd annual edition of the authentic "*Catalog-Directory of Industry Suppliers.*" This publication is sometimes called the "telephone purchasing man's Bible." Your copy may be secured, as long as the supply lasts, by writing to the *managing editor* of this magazine.

However, on the other hand, locating the closest source of highly specialized items that are greatly needed from time to time, may not turn out to be easy to do within the time limit dictated by the problem. A case in point can be such items as electrical test clips.

Basis of Current Problem

FLEXIBLE, insulated wire terminated with spring clips used for making temporary electrical connections are such commonly used items in testing operations that it is difficult to understand that there can be any problem encountered in their choice and application. Yet, over the years, newcomers to the telephone industry are not the only ones who have experienced difficulties in this regard.

If the writer's recent correspondence is any indication, this situation is still a current problem in many areas.

Among the many possible reasons for this condition is the fact that electrical testing in the Independent telephone field has been gradually spreading and increasing, especially since the end of World War II. This is an encouraging trend because some of the chief characteristics of good telephone service can only be accurately measured by modern electrical test equipment which has been engineered for the purpose.

PLANNING does not necessarily have to be restricted to large projects. Any work involving the expenditure of money justifies its due share of attention to make it fit best into the overall scheme of things.

Another reason is the trend in communication equipment design toward more compactness and the use of smaller components which in turn requires that testing apparatus, accessories, and methods be coordinated accordingly.

These two reasons in themselves are sufficient to influence more telephone companies than ever before to become actively concerned about the available styles, sizes, and kinds of test lead assemblies as well as the sources from which these inexpensive, specialized, but essential items may be secured on short notice.

Under certain circumstances this can be a very important subject. Even with good instruments, electrical testing can become an awkward, and burdensome chore, unless convenient accessories are on hand and in satisfactory working condition.

Some electrical test instruments come complete with a set of test leads, along with an instruction manual and other such items as are required for immediate usage. In other cases, in addition to the instrument proper, it is necessary to specifically describe and order the test leads that are desired. In still other cases, depending upon the type of instrument being purchased and the manufacturer involved, the purchaser is expected to supply test leads himself from such sources as he can discover.

Test Lead Limitations

TEST LEADS that are automatically furnished as an integral part of some test sets may be satisfactory for many telephone applications but seldom will they be ideally suited for *all* possible cases especially if the instrument is to be used on outside plant as well as inside plant. Even if the test set's use is to be restricted to either one or the other types of plant, it is still the exception rather than the rule that any one set of test leads is universally applicable because of the wide variety of facilities used in constructing modern telephone systems.

Many examples of this latter state of affairs can be cited, a typical one being the multimeter (volt-ohm-

milliammeter) which normally is furnished complete with a general-purpose test lead assembly quite satisfactory for a number of applications but not suitable for clipping to the springs of standard telephone relays.

The answer to this predicament, of course, is that each major manufacturer of telephone switching systems or manufacturer of relays can furnish specially designed test clips entirely suitable to use on his type of relay springs. An inquiry directed to this source will bring complete information. There is, consequently, no good reason for struggling along using makeshift substitutes some of which may actually damage the relays or at least alter their original factory adjustments.

The manufacturers of other useful testing devices, including a variety of clips and prods, are many and scattered. Over a dozen of them use the services of authorized distributors to get their ingenious products

EVEN with good instruments, electrical testing can become an awkward and burdensome chore unless convenient accessories are on hand and in satisfactory working condition.

into the hands of the users. Thus distributors' catalogs include mention and sometimes illustrate the more popular testing items. Unfortunately, these catalogs are often condensed and complete details of these relatively small but indispensible items are not always included. The answer to this problem is to request the distributor to supply a pamphlet or leaflet showing the entire line of items made by each manufacturer of test accessories that he represents.

Most of these descriptive sheets include dimensions of each device. One manufacturer includes photographs and drawings of each test clip exactly one-half of actual size. Others make a practice of furnishing samples of test clips for first-hand inspection.

These data on sizes and shapes are especially useful because they are critical considerations in many of today's applications.

Suitable Test Leads

AS A RESULT of making a recommendation recently in this magazine to use "suitable flexible test leads and clips" with certain portable test instruments in order to insure the most efficient and accurate results, one reader wanted to know the address of the "Suitable Company" that made such testing assemblies. A discussion with the questioner proved he was serious. The following suggestions were made to him of ways to secure official, reliable information about test leads and clips best suited to use for a particular job:

(1) Write to the manufacturer of the electrical test instrument you plan on using and explain your problem. In using this approach the writer has always found the testing instrument manufacturers' application engineers to be interested in such problems and quite willing, yes, even anxious, to cooperate.

Very often your questions can be answered promptly because others may have referred the same or similar problems to them before you did and the solution is already worked out — and is yours for merely the asking!

(2) Write to the manufacturer of the equipment to be tested and request his advice. Doubtlessly the manufacturers' engineers have already developed testing methods that were used in the factory assembly, production, and final test stages that are suitable with few, if any, modifications for testing in the field. This is a fruitful source of information that should not be overlooked.

To many who have not specialized in telephone testing work, the outcome of a survey and detailed investigation of present-day, labor-saving testing accessories, along the lines suggested, is just short of astounding. It will be discovered, for example, one manufacturer of electrical specialties alone lists 50 different general styles and models of test clips including an unusual one called "The Snapper."

The Snapper is a long insulated test clip of unique design that is fitted with spring contact jaws on the far end which are operated by a push of the thumb on the near end. This handy device will be found very useful in unusually cramped quarters and, in addition, can be used as a retriever to pick up odds and ends that may accidently be dropped into inaccessible places.

"He Who Stops Being Better . . . Stops Being Good"

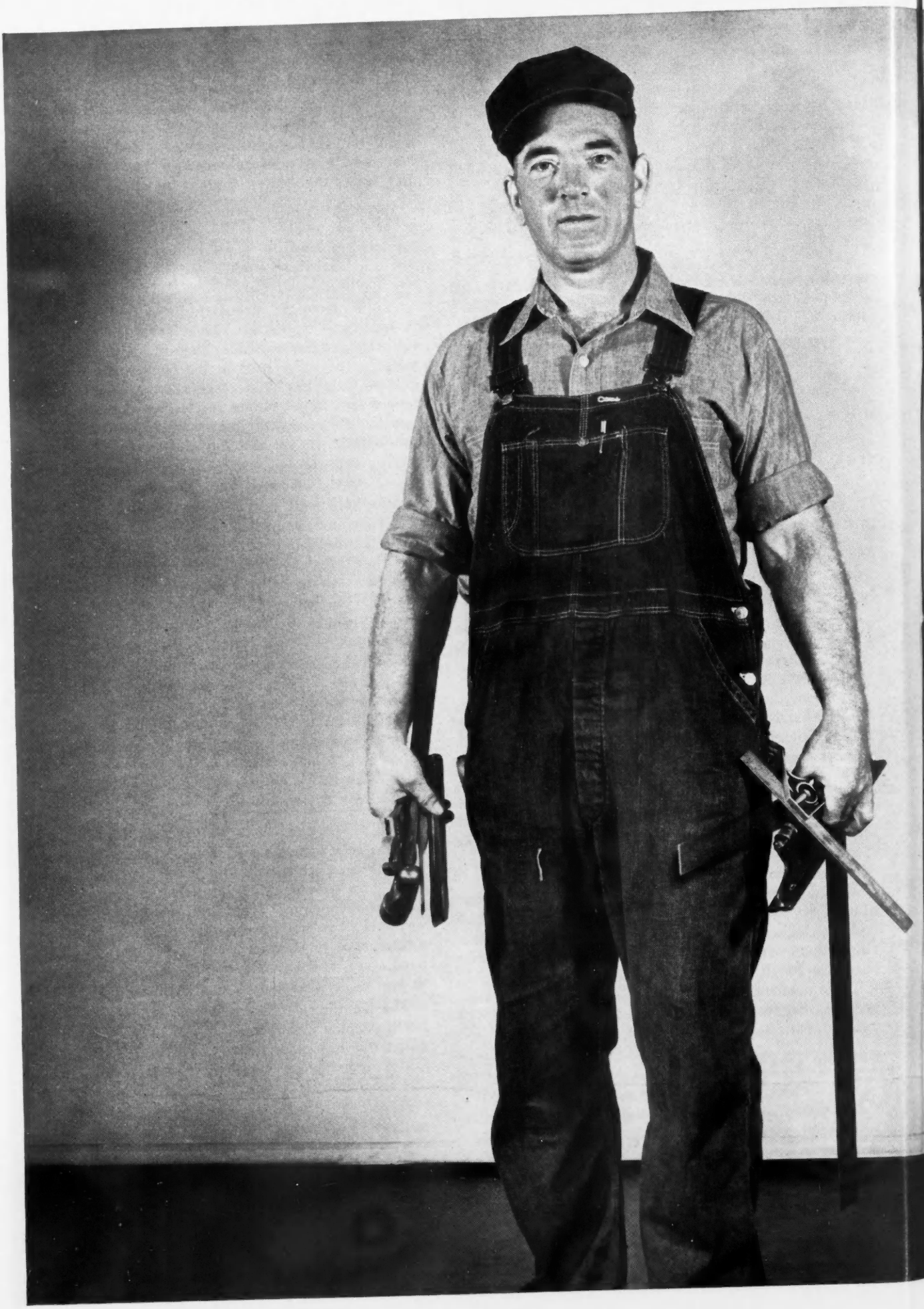
THE MAIN purpose in outlining the foregoing facts has been to emphasize straight-forward methods of strengthening weak points in plant practices wherever they exist. Absence of essential test equipment will handicap economical operating procedures in the same way and in no less degree than the lack of any vital maintenance tool. After all, testing apparatus and related accessories are tools that can be just as important as any mechanical tool — and, at times, more so.

The planning necessary to correct the class of deficiency under discussion is no different than that required for any other improvement project. Projects of this general type can be summed up in broad questions like the following:

What can we do to improve our company's operating methods?[2] operating results?[2] to better our telephone service to our community?[2]

Unless a manager is willing to face this daily cross-examination, he might as well retire. Because as Oliver Cromwell (1599-1658) so well said: "He who stops being better, stops being good!" — T. De Witt Talmage.

[2] *"Nothing is particularly hard if you divide it into small jobs."* — Henry Ford.



PORTRAIT OF AN INDUSTRY

The Millwright

He moves, erects and dismantles machinery and equipment. In this way—by removing old and installing new production lines—the millwright contributes to the efficiency of the plants where telephone equipment is made for Bell telephone companies.

Like the lineman and the operator, the millwright lends his special skill and talents to help achieve the common goal of the telephone industry... providing better telephone service for America.

California Convention Report

Californians Meet In Los Angeles: Over 700 Attend 38th Annual Meeting

AN UNSEASONAL Los Angeles heat wave greeted over 700 members of the California Independent Telephone Association who attended the Thirty-Eighth Annual Convention, held from Wednesday, June 5 through Friday, June 7 at the Ambassador Hotel.

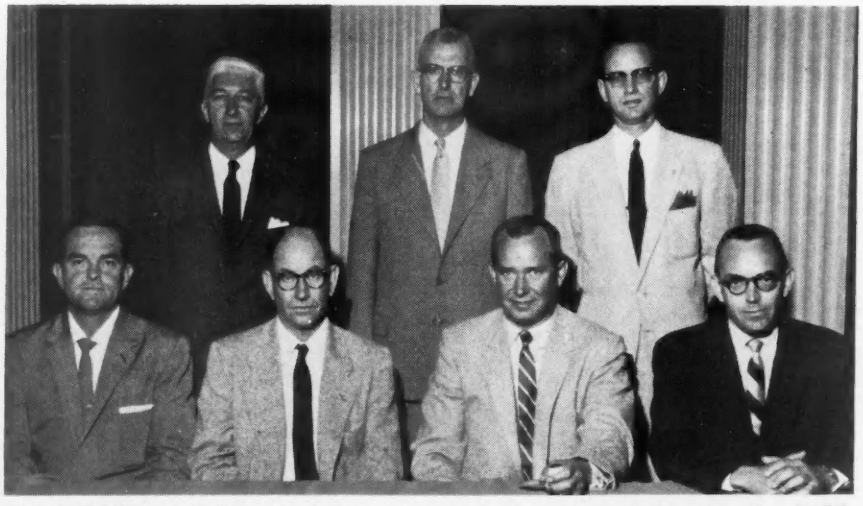
The general session began on June 5 in the Embassy Room. Colonel Richard F. Lynch, director of Civil Defense for Los Angeles, representing Mayor Poulson, welcomed delegates to the City of Los Angeles, followed by an address by Fred H. MacGougan, president of the Association, who presented a resume of CITA events during the 1956-57 term of office.

He mentioned that at the end of 1956 there were 53 Independent telephone companies serving 176 exchange areas and in excess of 1,050,000 telephones in California. Ten years ago there were 79 companies, serving 164 exchange areas and approximately 305,000 telephones. Although the number of companies has decreased by 33 per cent, the number of stations served has increased by 245 per cent. Plant investment during the same period has increased from approximately $46,700,000 to $356,600,000. The gross revenues of all California Independent companies have increased from $17,900,000 for the year 1947 to $93,300,000 for the year 1956, or 421 per cent.

Discussing the secretary's activities MacGougan stated, "In addition to carrying out the administrative duties of the Association, Mr. Hasbrook, our secretary, has given time to assist member companies in the preparation of formal proceedings involving Independent telephone companies before the California Public Utilities Commission. An application for a rate increase was prepared and filed from Toulumne Telephone Co. in July 1956. An application was also prepared and filed for the Parker Valley Telephone Co. requesting authority to establish rates for service in California. The rates requested by the application were approved by the Commission.

"Applications for authority to issue securities and execute evidences of indebtedness were prepared and filed by the secretary for the Toulumne Telephone Co., the Mariposa County Telephone Company, Inc., the Sierra Telephone Company and Capay Valley Telephone System, Inc. The Coachella Valley Telephone Co. was assisted in connection with its application for extended service between its Palm Desert office and the Palm Springs exchange of the California Water & Telephone Co. The secretary appeared for the companies and the Association in these proceedings."

Talking about the Association's relationship with the USITA, MacGougan said, "Our Association cooperates with the United States Independent Telephone Association to the greatest extent possible in any programs it undertakes for the general benefit of the industry in the United States. During the past year this cooperation consisted primarily of an interchange

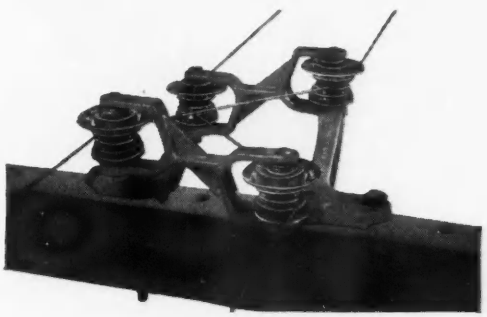


DIRECTORS of California Independent Telephone Association for the 1957-58 term of office. Front row, seated, from left to right; J. P. MAGUIRE, Kern Mutual Telephone Co.; J. CURTIS NEWMAN, Coachella Valley Telephone Co.; DONALD H. STRAHL, Gilroy Telephone Co.; NEAL C. HASBROOK, secretary-treasurer for C.I.T.A. Second row, standing, from left to right: HARLAN W. HOLMWOOD, General Telephone Co. of Calif.; PETER A. NENZEL, California Water & Telephone Co.; and ALLAN R. STACEY, Sunland-Tujunga Telephone Co. W. GILMAN SNYDER, The Western Telephone Co., not shown in the picture.

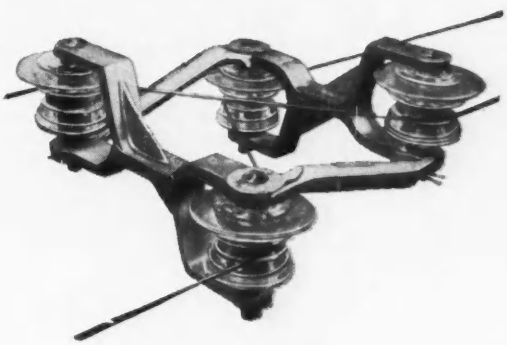
CASE

ALUMINUM TRANSPOSITION BRACKETS

Offer Improved and Economical Methods in Carrier Circuit Transpositions



Case Crossarm Point Transposition Bracket R.H.



Case Span Point Transposition Bracket R.H.

Especially adapted in carrier circuit construction. It is the lightest and strongest transposition bracket manufactured.

Glass insulators come equipped with special rubber bushings which maintain line circuit operation in event of breakage.

INFORMATION FOR ORDERING CASE BRACKETS

Crossarm Point Bracket

Catalog Number	Type	Conductor Spacing	Weight Per 100-Pieces
SE-1648	Right Hand	8 inch	200 lb.
SE-1780	Left Hand	8 inch	200 lb.

Span Point Bracket

Catalog Number	Type	Conductor Spacing	Weight Per 100-Pieces
SE-1611	Right Hand	8 inch	150 lb.
SE-1590	Left Hand	8 inch	150 lb.

Glass insulators (Hemingray #1088) or Rubber insulators (RC-1) used on Case Transposition Brackets should be ordered separately.

Sold by Leading Distributors in the United States

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TRANSANDEAN ASSOCIATES, Inc.

301 MAIN STREET, ORANGE, N. J.

THE MAKING OF USS AMERTEL TELEPHONE WIRE

A story of Quality in four parts

PART I:
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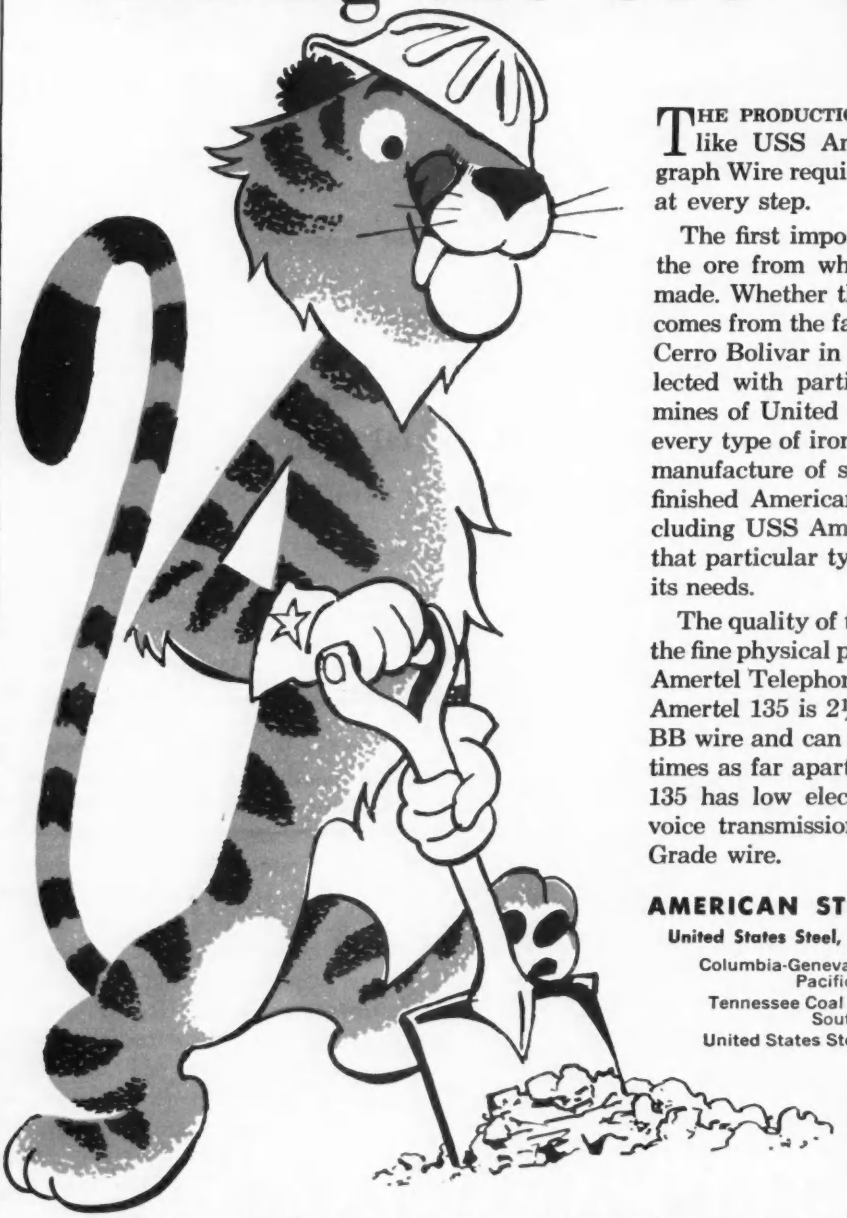

THE PRODUCTION of a fine quality product like USS Amertel Telephone and Telegraph Wire requires special care and attention at every step.

The first important step is the selection of the ore from which high-grade wire will be made. Whether the iron ore for USS Amertel comes from the famous Mesabi Range or from Cerro Bolivar in far-away Venezuela, it is selected with particular care. In the iron ore mines of United States Steel is found almost every type of iron ore used in the present-day manufacture of steel. This means that every finished American Steel & Wire product—including USS Amertel—can be produced from that particular type of steel which best meets its needs.

The quality of the steel has much to do with the fine physical properties of the finished USS Amertel Telephone and Telegraph Wire. USS Amertel 135 is 2½ times as strong as regular BB wire and can be strung with poles set 2½ times as far apart. In addition, USS Amertel 135 has low electrical resistance and better voice transmission characteristics than Steel Grade wire.

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***USS TIGER BRAND AMERTEL** Telephone & Telegraph Wire*

UNITED STATES STEEL

of information regarding separation procedures between the USITA's Toll Engineer and the Association. It was not necessary for our Association to introduce legislation in California to implement the Federal Highway Bill's provision for compensation to utilities for the cost of relocation of plant in connection with the construction of Federal highways. Existing California legislations already contain such provisions. Our Association cannot justifiably support the USITA in its drive to retain the 750 station exemption in the Federal wage laws as California wage laws exempt only exchanges less than 150 stations and, therefore, has not been active in this respect. The Association also keeps the USITA informed of its activities and any developments that could affect the industry on a national scale."

Second speaker for the afternoon, Foster B. McHenry, vice president of the United States Independent Telephone Association, Washington, D. C., chose as his topic, "Our Place in The Sun." According to McHenry the telephone is the heartline and life line of America today.

"There are 4400 Independent (non-Bell) telephone companies in the United States," he said. "Independents have 9 million telephones and serve two-thirds of the geographical area of the United States. No business is more representative of American free enterprise than the thousands of Independent companies," McHenry continued.

McHenry further cited that this is the 60th year of the United States Independent Telephone Association.

"Today, one of our most pressing problems is financing in a 'tight money age'," he said. "Many of our companies are faced with a need for price increases," McHenry stated in conclusion.

The second day's session featured four panel discussion groups dealing with commercial plant, accounting and traffic problems.

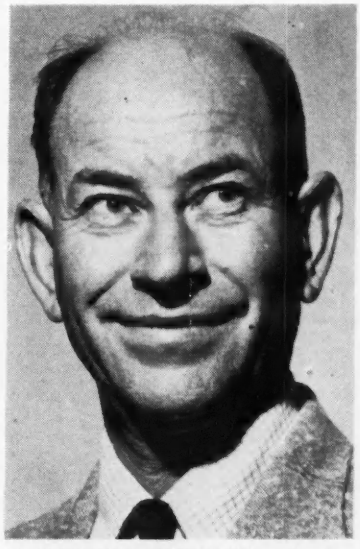
Discussing commercial operations, R. A. Dinsmore of the California Interstate Telephone Co., presided as chairman and was assisted by Mrs. Lucille Conover, California Water & Telephone Co., Mrs. Hazel M. Downey, Sunland-Tujunga Telephone Co., Willard Hanley, General Telephone Co. of Calif., and R. W. Sproul of the Pacific Tel. & Tel. Co.

R. W. Sproul, supervising accountant for The Pacific Telephone & Telegraph Co., San Francisco, explained how toll tickets could be prepared and submitted for billing and how to interpret centralized automatic message accounting information for subscribers.

THE OUTGOING California Association President, FRED H. MacGOUGAN, stops to talk with three charming ladies, (from left to right), Mrs. NEAL HASBROOK, Mrs. KEITH REGEL and Mrs. HARRY BARROWS.

Willard Hanley, general sales supervisor at General Telephone Co. of Calif., spoke on procedures for increasing revenue through sales, or sales policy as it relates to meeting or creating demand, and on the meaning of merchandising.

"Increasing population, gross national product, and income, offer the telephone industry the greatest challenge it has ever faced," he said. "Competition for consumers' discretionary spending power. The extent to which the telephone industry will get its share of the dollars spent by today's and tomorrow's consumers will depend upon the industry's ability to merchandise its services more effectively than other industries which are competing for the same consumer's dollars."



MEET THE NEW California Association President, J. CURTIS NEWMAN, Coachella Valley Telephone Co. of Thermal, who will preside during the 1957-58 term of office. Mr. Newman was first vice-president prior to his newly elected office.

Hanley then introduced Darline S. Irwin, public relations representative of General Telephone Co. of Calif., who in an entertaining and informative talk pointed out that through the company's public information programs, which stress good telephone usage; the proper use of the electronic secretary; transistorized hearing aid; hands-free 88A adapter unit, and colored instruments, unexpected sales often resulted.

Acting as chairman of the plant panel, W. W. Stahl, California Pacific Utilities Co., was aided by H. O. David, Western California Telephone Co.; Harold C. Diddell, Pacific Telephone & Telegraph Co.; G. W. Harrison, General Telephone Co. of Calif.; and D. A. Strahl, Gilroy Telephone Co.

Harold C. Diddel, in discussing exchange transmission planning, said: "Transmission is the product we have for sale. It is the basic foundation of our telephone business. Transmission is divided in two categories; signalling, to establish a call, and

finally providing good speech channels after calls are established. Customers judge the excellence of our product by their ease of communication. The channels should provide satisfactory sound volume, and tone range to the extent that need for repetition is small. Thirty some years ago it was not uncommon to have an intermediate operator repeat customers' conversations on a small percentage of inter-exchange connections. This was a result of poor transmission, both in exchange and toll plant. We have progressed tremendously since then, in both intra and inter exchange connections but we need to progress further."

An interesting talk on safety practices was presented by George Harrison, safety supervisor for General Telephone Co. of Calif., who stated, "Occupational injuries or deaths from occupational injuries total 2,000,000 since the end of World War II. Accidents involve expense, including loss of production, damage to products, etc."

Safety and accident prevention, according to Harrison, are more important than most company functions.

"Management is responsible for and should work toward accident prevention," he said. "The authority rests with management and the safety program must be flexible enough to include safe and correct working practices. Death, or lifetime disabilities, mean the loss of a productive employe to the company as well as the loss of a 'breadwinner' for his family. The company, it must be remembered, is always responsible for accidents or death as far as the public is concerned. In the telephone company, there are three classes of responsibility: (1) Supervision (the supervisor must not furnish improper tools or give poor advice); (2) The individual (he must not fail to observe safety rules and should not take short cuts); (3) Plant conditions (which must not include poorly functioning tools or human failures occurring outside the company)."

The "Backward Look" presented by H. O. Davis of Western California Telephone Co., discussed how his company cut down on high plant maintenance costs.

During the afternoon the Accounting Panel met in the Embassy Foyer. Opening remarks and introduction of panel members was conducted by Chairman, Keith E. Vine of the California Water & Telephone Co., assisted by Leland A. Dowden, San Joaquin Telephone Co., John F. Donovan, California Public Utilities Commission, and Blair Hutson, State Board of Equalization.

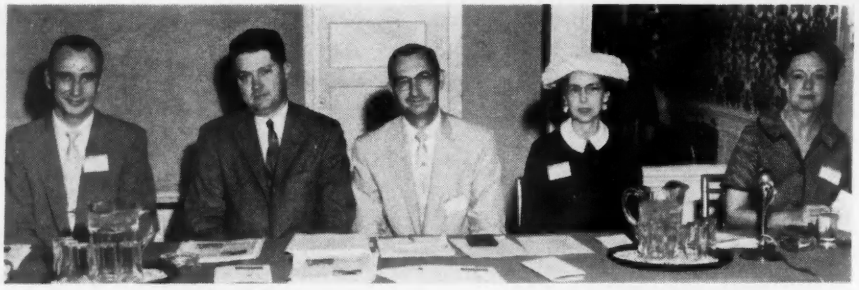
The Regency Room played host to the Traffic Panel with Owen G. Jarboe of General Telephone Co. of Calif. as chairman. Assisting him were Mrs. Joan Braun, San Joaquin Telephone Co., Louise Kirby, Sunland-Tujunga Telephone Co., Bessie Reece, Coachella Valley Telephone Co., and A. S. Taylor of California Interstate Telephone Co.

On Friday morning, June 6 — last day of the three-day meeting — new Association officers and directors for 1957-58 were announced by Willard Wade, chairman of the Nominating Committee, who presented the newly elected president of the Association, J. Curtis Newman of the Coachella Valley Telephone Co., succeeding Fred H. MacGougan. Newman will also remain a director.

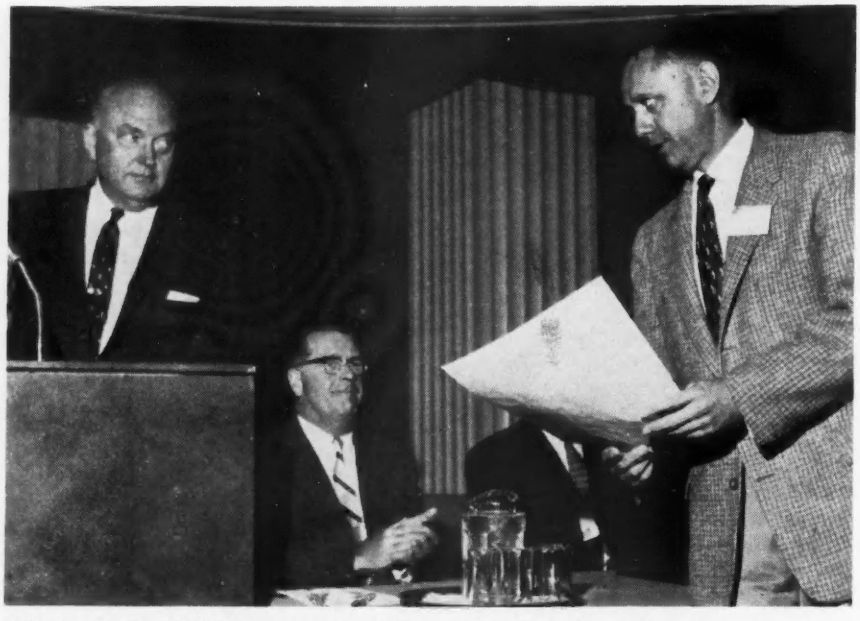
Other officers elected for the 1957-58 term are: J. P. Maguire, first vice-president; Donald H. Strahl, second vice-president, and Neal Hasbrook, secretary-treasurer.

Directors will be: J. Curtis Newman, Peter A. Nenzel, Allan R. Stacey, Harlan W. Holmwood, J. P. Maguire, W. Gilman Snyder, Donald H. Strahl, and Neal Hasbrook.

Main speakers at the final session included the Honorable Matthew J. Dooley, commissioner of the California Public Utilities Commission, and James S. Cantlen, vice-president, Pacific Telephone & Telegraph Co. — *Prepared from data prepared by George A. Bridges.*



DISCUSSING COMMERCIAL PROBLEMS members of the California Convention Commercial Panel gather in the Regency Room of the Ambassador Hotel. Seated from left to right: WILLARD HANLEY, General Telephone Co. of Calif.; R. W. SPROUL, The Pacific Telephone & Telegraph Co.; R. A. DINSMORE, chairman, California Interstate Telephone Co.; Mrs. HAZEL M. DOWNEY, Sunland-Tujunga Telephone Co.; and Mrs. LUCILLE CONOVER, California Water & Telephone Co.



RICHARD D. CROWE, (right), of Dos Palos Telephone Co., Inc., accepts a resolution from EDWIN M. BLAKESLEE, (left), president of General Telephone Co. of Calif. and chairman of the resolutions committee.

One Man
Working Alone
Can Identify
Non-Working
Cable Pairs
3 Times Faster
Than 2 Men
Working Together
If He Uses
The Murphy
ONE-MAN
Cable Tester

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SAVE time . . . money . . . manpower with Murphy One-Man Cable Tester. Thousands are already in use by progressive telephone companies all over the world.

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MURPHY ENGINEERING LABORATORIES, Inc.

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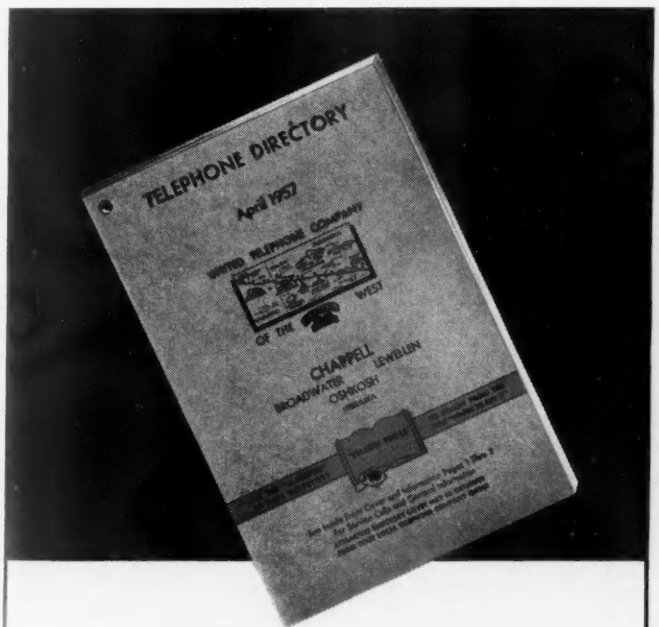

A directory for the
United Telephone Company of the West, Nebraska
printed by

R. R. DONNELLEY & SONS COMPANY

350 East Twenty-second Street, Chicago 16

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OF Stainless Steel

You get a neat and long-lasting job every time you use PAGE Stainless Steel Lashing Wire! Ideal for lashing conductor cables (lead or neoprene covered) to a strand messenger by Neale or Western Electric Machine. Coils tailored to fit machine specified.

3 GRADES • EACH IN 2 SIZES (.065 and .045)

Type 430 • for use with galvanized messengers
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Furnished six coils in cardboard carton (minimum order).

Other fine-quality products • You can depend upon PAGE Strand (Stainless or Galvanized Steel) and PAGE Stainless Dead-End Wire • See your Telephone Supply Distributor, or write our Monessen, Pa., office.

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ACCO
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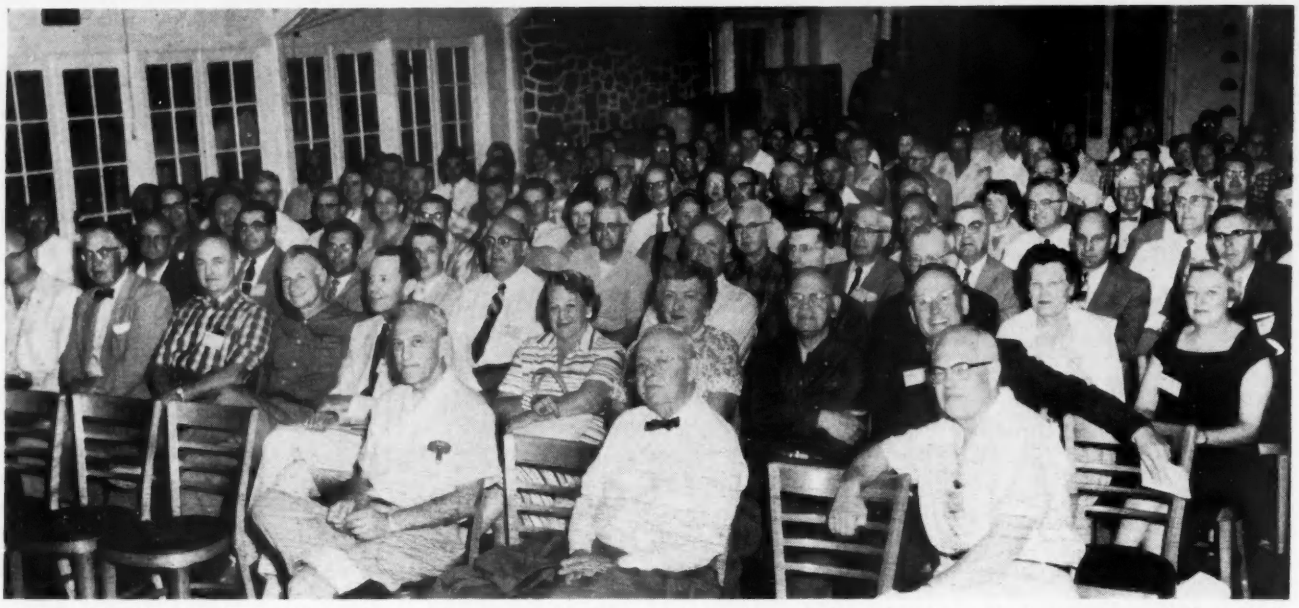


PART OF THE CROWD filling the meeting room for the third session of the 35th Annual Convention of New York State Telephone Association.

New York Independents Meet

450 Attend 35th Annual Meeting: C. Ray Lloyd Elected President

SERVICE trends of today and tomorrow, rates and regulation, merchandising, and a review of early communication methods were discussed by speakers addressing the 35th annual convention of the New York State Telephone Association.

More than 450 telephone men and women attended the three-day meeting, June 17, 18 and 19 at Scaroon Manor, Schroon Lake, N. Y.

With New York Association President, C. Ray Lloyd presiding at the first general session, the New York conventioners heard Mr. Lloyd, Executive Secretary Hamilton A. Cunningham, and Clyde S. Bailey, Executive vice president of the U. S. Independent Telephone Association, Washington, D. C., representing Donald C. Power, president of the General Telephone Corp., and the United States Independent Telephone Association, emphasize the status of the Independent telephone industry in the United States and point up solutions for today's operating problems.

Discussing the subject of expansion, President Lloyd asked — "Is your telephone company 'doomed by' or 'dedicated to' expansion?" and pointed out that plant engineering has four increasing complexities; (1) The increase in number of stations, (2) the upward regrades in service; (3) the increased usage of the telephone; and (4) special uses of facilities.

"A backward glance into the engineering of 10 years ago helps us very little in today's planning for tomorrow," he said. "Times have changed. Today, we are talking terminal-per-station rather than terminal-per-line central office equipment, five-party rather than 10-party rural line service, customer toll dialing rather than operator handled toll calls, extended area service into multi-office metropolitan networks rather than service restricted to single office networks. When the expansion factors and the new trends in service are all considered you can well understand the theme of my talk. Is your plant being engulfed by expansion — is it inadequate — is it doomed — or is your plant being engineered to meet today's and tomorrow's service trends — is your plant dedicated to provide your subscribers with a modern, whatever you want type of telephone service?"

Emphasizing that the telephone company not dedicated to expansion is doomed, Mr. Lloyd concluded, "It will become the victim of internal disintegration caused by poor telephone service, poor public relations, a deteriorating plant, and the inability to finance new capital. If, however, your company is dedicated to expansion the subscribers will have the best of service, the public relations will be good since they come from satisfied subscribers and the financing problem can be met on a positive basis. . . ."

Executive Secretary Cunningham reported to the convention that 87 of the 96 operating telephone companies in New York are active, dues-paying members of the New York Association.

"During 1956," he said, "15 Independent telephone companies were granted rate increases which were estimated to produce $445,772 additional revenues annually. Since the first of the year, three other companies have been granted subscriber rate adjustments estimated to provide $25,636 annually in additional revenues."

Mr. Cunningham reported that in 1956, 17 finance cases were handled by the New York Public Service Commission for as many Independent telephone companies. $734,990 in common stocks, $4,447,500 in preferred stocks, $675,000 in mortgage bonds or secured notes and $3,099,000 in notes, debentures and certificates were authorized.

"When one really looks at these figures," he said, "and considers them carefully and realizes that this is new money poured into our industry, in one year, we can appreciate the fact that the growing, expanding and improving Independent telephone industry is termed 'America's Little Giant' in financial circles. . . ."

Mr. Cunningham stated that all of

the rate matters "were handled in the Public Service Commission informally, ... in conference and discussion with members of the staff without public hearing."

"Now there is no doubt," he said, "that we fully appreciate that being able to negotiate rate increases in such a manner and in such a friendly atmosphere is of immeasurable value to our member companies, but not in any case did the rate of return on a depreciated original cost rate base — not in any did the rate of return provide the allowable 6 per cent. It came close in most all cases, but never quite reached 6 per cent."

Referring to the finance cases, he reported that the "staggering sums of money were borrowed at interest rates ranging up to 5¼ per cent and recently we were given good reason to believe that interest rates will creep even higher."

"I can be much more emphatic — in negotiations currently being conducted by at least one member company, the interest rate quoted *is* higher," he said. "A very real problem confronts us. What do we do if our sources for borrowings dry up, because our earnings picture does not satisfy their requirement? — because the number of times the interest requirement is earned is reduced by the shrinking spread between the cost of capital and the allowed earnings? This is not speculation — it is fact — the question has already been raised by one of our principal sources for bond money. The problem is with us now and we must work toward its solution."

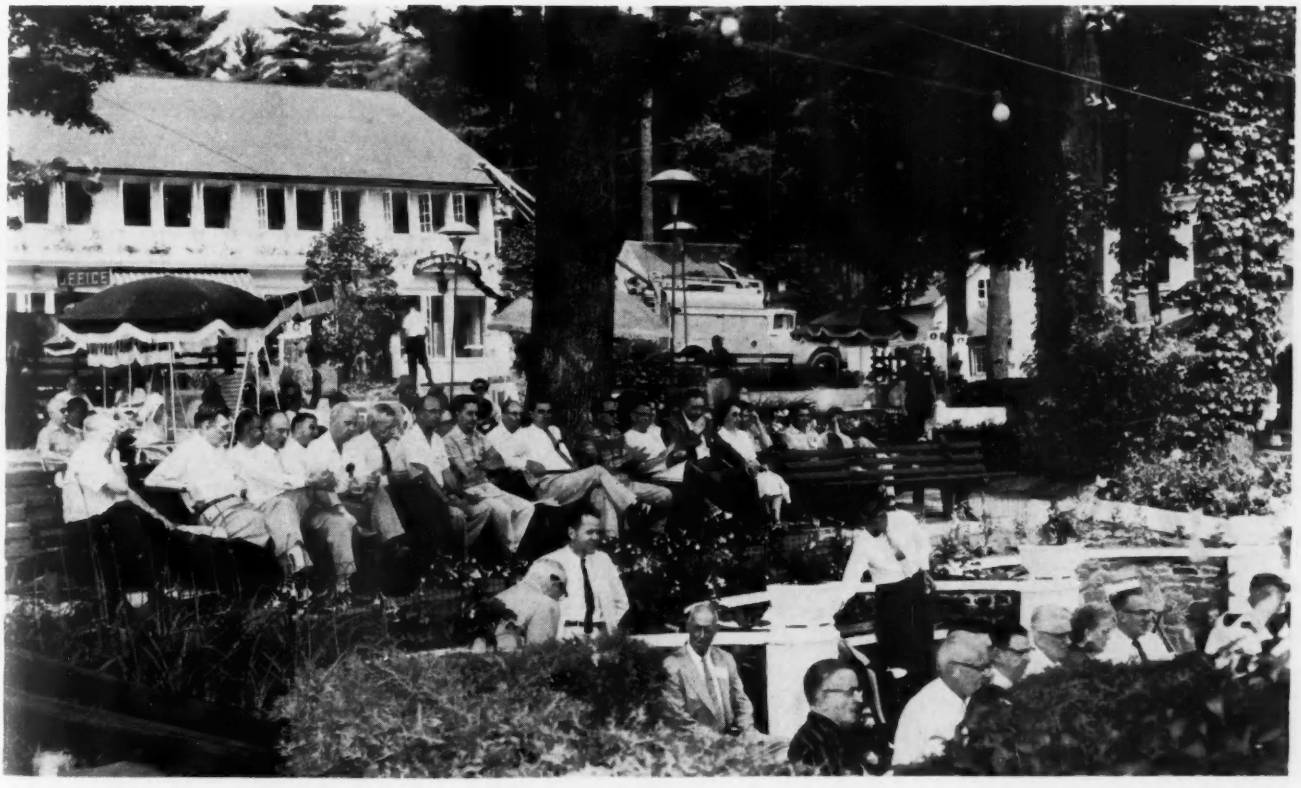
"Some of our member companies have questioned the wisdom of the Association's vigorous participation in the battle to keep the Public Service Law as it now is. Others with whom we are associated have been somewhat critical of our action, too. But our position — of course — is abundantly clear, we must labor diligently for the 'long pull' — for the 'end result' — sufficient earnings to meet the requirement of our leaders and to provide a just and reasonable return to the equity investor. For the larger company, the value or reproduction cost rate may well be the answer — but for the smaller company which may not be able to sustain a full-blown rate case — what is the answer for *it?* Will it be denied the right to existence? We hardly think so — and the solution to the problem is quite simple. The answer lies in an upward adjustment in the allowable rate of return at least commensurate with the increased cost of capital. . . ."

Reading a paper prepared by USITA President Donald C. Power, *Mr. Bailey* told the New Yok convention that the General System sees merchandising as a dynamic approach to the market opportunity for telephone service.

"That viewpoint," he said, "coincides very closely with the textbook definition that defines Merchandising as being marketing strategy to get the *Right Product* to the *Right Place* in the *Right quantity* at the *Right price* at the *Right time* in the *Right light*. Merchandising is really a much broader concept than simply 'high pressure' or intensified selling, for it has a place in every phase of the marketing process from selection of the raw materials for the product, through product design, pricing, packaging, advertising, and selling to the point where the customer actually takes possession of the merchandise. It embraces the whole process of getting a product from its raw state into the hands of the customer who will use it. . . ."

New York Association Vice President Albert N. Seward presided at the second session and presented O. Townsend MacMillan, vice president, Upstate, New York Telephone Co., Albany; Aaron L. Jacoby, Commissioner, State of New York Department of Public Service, Brooklyn; and John E. Holt-Harris Jr.

Speakers at the final session pre-



OUTDOOR, OPEN AIR MEETINGS were an innovation, and a welcome one. More people attended New York Convention sessions than ever before.

sided over by Past President Don W. Walker, were: John P. Boylan, board chairman, Rochester (N.Y.) Telephone Corp.; Francis X. Welch, editor, "Public Utilities Fortnightly," Washington, D. C.; and Joseph R. Shaw, president, Associated Industries of New York, Inc., Albany.

During the business session the following officers were re-elected: C. Ray Lloyd, president; Albert N. Seward, vice-president W. M. Griswold, treasurer; George S. Beckwith, secretary-asst. treas. and Hamilton A. Cunningham, executive secretary.

Directors are: George S. Beckwith, Sheldon A. Birdsall, F. Mark Clark, Frank D. Fancher, Fred S. Florance, C. Ray Lloyd, Robert Maytum, William A. Seely, Albert N. Seward, R. Parker Sullivan, and Don W. Walker.

Winners of the Exhibitors' Jackpot Prizes (each a new $50 bill) were Miss Agnes V. Rowell, secretary and general auditor, Orange County Telephone Company, Middletown; Edward J. Lynch, district plant superintendent, Tri-State Associated Telephone Corp., Port Jervis, and Mrs. A. E. Beckwith, wife of Al Beckwith, General Plant Engineer, General Telephone Co., of Upstate New York, Inc., Johnstown.

Winners of Early Attendance Prizes were: K. F. Jacobs Fulton, Robert Griswold, Phelps; and Mrs. E. V. Moran, Albany.

MISSOURI PIONEERS MEET (l. to r.): DR. MAX H. THORNTON, vice pres., Midwest Research Institute, Kansas City, Mo.; GEORGE A. HEARNE, newly-elected pres. Theodore Gary Chapter; WESLEY H. LOOMIS, III, Des Plaines, Ill., outgoing chapter pres.; and Sec.-Treas. KATHARINE A. BAUER.

Missouri-Kansas Associations Meet at Kansas City, Kans.

ELECTION of officers of the Missouri and Kansas Telephone Associations highlighted activities of the closing sessions of the sixth annual joint convention of the associations at the Town House in Kansas City Kans.

The Kansas association elected a board of directors to replace the executive committee as the managing agency of the association. Four directors elected for one-year terms are: Carl Travers, R. W. Warren, Clyde Tucker, and Harry A. Miller. Four directors elected for two-year terms are: Carl B. Brecheisen, S. V. Lyons, E. C. Smith, and H. H. Welsh. Four directors elected for three-year terms are: Rolley L. King, R. J. Fegan, Tom Laming, and Paul Grauer. At each annual meeting of the membership hereafter, four directors will be elected.

At the meeting of the Kansas board of directors H. H. Welsh was reelected president of the association, S. V. Lyons was reelected vice-president, Fred A. Schneider was appointed treasurer, and Douglas Gleason was reappointed secretary.

Officers elected by the Missouri association are: President, Harold Stouffer, Granby; 1st Vice President, R. E. Williams, Oregon; 2nd Vice President, O. C. Agne, Wentsville; 3rd Vice President, Miss Elizabeth Journey, Higginsville; 4th Vice President, J. C. Torbett, Wright City; Secretary-Treasurer, Katharine A. Bauer, Jefferson City; and Assistant Secretary, R. W. Hedrick, Jr., Jefferson City.

Directors of the Missouri Association are: H. Scott Gault, La Plata; J. M. Roberts, Gallatin; P. A. Browne, Mountain Grove; E. J. Ernest, St. Louis; Clifford T. Davis, Sullivan; George A. Hearne, Kansas City; John Holden, Cassville; Foster B. McHenry, Jefferson City; Jack Bartruff, St. James; C. W. Chastain, Princeton; J. L. Van Horn, Grinnell, Ia., and Edward G. Greber, St. Louis. Ex Officio member board of directors is R. R. Coffman, Cameron.

MISSOURI-KANSAS CONVENTIONERS (l. to r.): GEORGE A. HEARNE, Kansas City, Mo.; H. T. SCOTT, Dayton, Ohio; JOE TROTTER, Kansas City, Mo.; and DEE ADAMS, Kansas City, Mo.

Diamond Jubilee Convention

Plan to Attend USITA'S 60th Anniversary Convention, at Conrad Hilton Hotel, Chicago, October 14, 15, 16.

Power Sought To Cut Loss In Phone Thefts

THE ILLINOIS BELL Telephone Co., last month sought authority from the Illinois Commerce Commission to take steps to cut losses in thefts from coin operated telephones.

Thieves broke into 1,009 coin box telephones out of 52,500 in Chicago last year, according to a company report submitted to Wiliam E. Helander, ICC examiner. All Bell companies in the nation reported only 2,596 thefts from a total of 847,810 telephones.

The Chicago company sought authority to make semi-public telephone subscribers financially responsible for thefts. Gordon W. Winks, attorney for the company, asked for a provision permitting a $125 deposit on semi-public telephones in locations likely to be burglarized. In addition, Winks asked that semi-public telephone subscribers not making such a deposit be required to guarantee their bills in event the telephones were stolen.

The company also seeks the right to designate where semi-public telephones may be installed, or to refuse installation when a "bad risk" subscriber will not agree to a deposit.

Walter H. Flinn, Illinois Bell's general security manager, was unable to explain why Chicago telephones are so vulnerable. He said men arrested for breaking coin boxes pass on their knowledge to other county jail inmates.

Of the Chicago thefts last year, 868 were from telephones in gas stations, garages, and hallways of rooming houses and hotels. Flinn estimated that $40,000 has been stolen from 3,720 Chicago phones since Jan. 1, 1954.

Flinn said burglars unable to open coin boxes have destroyed $320,000 in equipment by ripping telephones off walls, then breaking the boxes and discarding the battered instruments.

About 1,880 of the 3,720 Chicago telephone thefts since 1953 were solved by arrests, Flinn said. The company spent $33,000 on investigations, he added.

FRANK DANE FANCHER, general manager. Orange County Telephone Co., Middletown, N. Y., is shown here with a small portion of his glass collection. Unique are the specimens from the "Golden Age of Glass," which started three centuries before the birth of Christ. Mr. Fancher started his glass collection with the earliest collectible examples — historically important pieces of early Roman glass. Today his collection includes many fine examples of the art of the glass-worker in the last century or two-paper-weights, "witch-ball," cameo glass, milk glass, pressed glass, cut glass, peach blow, art glass — innumerable techniques and colors are represented.

Lincoln Tel. & Tel. Completes Two Dial Cutovers

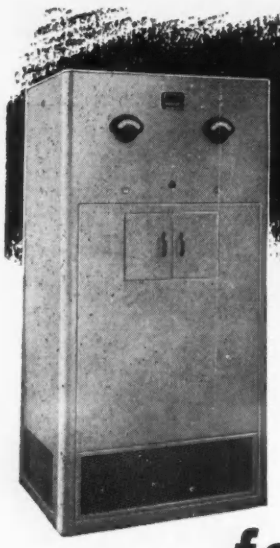
NEW DIAL telephone systems at Beatrice and Pickrell went into service last month. They will provide local dial telephone service for 5,584 telephones at Beatrice and 151 at Pickrell.

Shortly after the conversion, Mayor Allen Davison of Beatrice dialed the first long distance call over the new direct distance dialing equipment to Governor Victor Anderson at Lincoln.

This was the first long distance call to be dialed from one customer's telephone to another in Nebraska. It started direct distance dialing for telephone users at Beatrice, DeWitt, Filley, Pickrell and Plymouth.

J. E. Campbell Elected Director, Michigan General

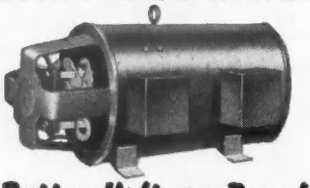
ELECTION of J. Evans Campbell of Owosso to the board of directors of the General Telephone Co. of Michigan has been announced by President T. A. Saunders. Mr. Campbell is president of the Owosso Argus-



ADD A FLOTROL

TO YOUR

ROTARY EQUIPMENT



for: • Better Voltage Regulation
• Sizeable Power Bill Savings

A telephone exchange now using DC generators for charging the batteries can add one or more FLOTROLS and immediately obtain the precise voltage regulation characteristics of the FLOTROL for the entire exchange. The high efficiency of the FLOTROL will greatly reduce power consumption during those hours of the day when the FLOTROL alone is sufficient to carry the entire load; generators can be shut off during light load periods, thereby reducing the wear on the rotating equipment. By installation of FLOTROL capacity sufficient to carry the entire normal load, rotating equipment showing signs of wear can be saved for standby service, continuing its life indefinitely. The advantages obtainable from this type of installation are tremendous. For further information, send for Bulletin 161.

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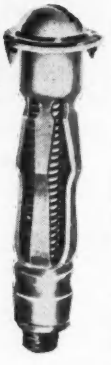
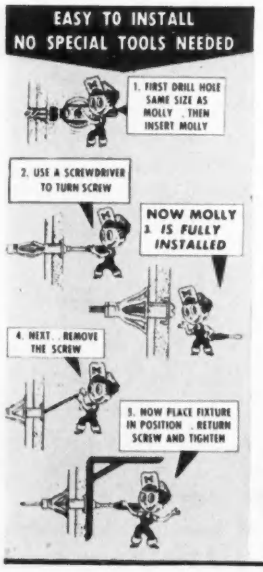
Join the SWITCH from

Toggle Bolts to MOLLY



Molly screw anchors are making toggle bolts obsolete. Company tests have proved Mollys seven ways better for attaching station apparatus and wiring to walls of hollow construction. So join the switch to Molly screw anchors and enjoy these advantages:


EASY TO INSTALL
NO SPECIAL TOOLS NEEDED
1. FIRST DRILL HOLE SAME SIZE AS MOLLY . THEN INSERT MOLLY
2. USE A SCREWDRIVER TO TURN SCREW
NOW MOLLY IS FULLY INSTALLED
4. NEXT . REMOVE THE SCREW
5. NOW PLACE FIXTURE IN POSITION . RETURN SCREW AND TIGHTEN

1. Require smaller holes
2. Easier to install
3. Neater in appearance
4. Eliminate need for backboards with certain types of equipment
5. Self-aligning to permit use beside studs and on uneven wall backing
6. Permanent anchorage—attachment may be removed and replaced in same anchor
7. Apparatus does not have to be held while anchor is being installed

AND MOLLYS COST NO MORE . . in some sizes, less!

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Press Co., publishers of the only daily paper in Shiawassee County.

In addition, Mr. Campbell serves on the board of directors of the Owosso Savings Bank, the Owosso Chamber of Commerce and the Owosso Memorial Hospital. He is past president of the University of Michigan Press Club and for many years has been active with the Bureau of Advertising of the American Newspaper Publishers Association.

Bell Laboratory Develops New Transistor Process

BELL TELEPHONE Laboratories has developed a technique for attaching leads to transistors and other semi-conductor devices which is described as "a major break-through" in this area of the manufacturing process.

Called thermo-compression bonding, the technique employs a combination of heat and pressure to provide a firm bond between the various soft metals which make up the leads and the clean, single surface of the semi-conductor.

In the method in current use, the lead is joined to the semi-conductor by soldering on a masked area. Bell Labs indicated that this process presented problems in controlling both heat and the solder flow.

With the new technique, adhesion takes place in seconds with a pressure of a few thousand pounds per square inch and temperatures well below the melting point of both lead and semi-conductor, with no solder or chemical flux necessary.

Bell Labs said the new technique is readily adaptable to mass production and that intensive investigations are under way to determine the mechanism of this bonding process.

Columbia Utilities Purchases Crater Lake Phone System

COLUMBIA UTILITIES Co. Medford, Ore., has purchased the government-owned Crater Lake National Park telephone system according to an announcement made by D. O. Hood, president of the company.

The company plans to install a dial telephone system at the park. Preliminary work is already under way. Local exchange service will be substantially expanded, replacing the present government-owned magneto type system, Hood said. Most of the outside distribution system is in underground cable, and this too will be

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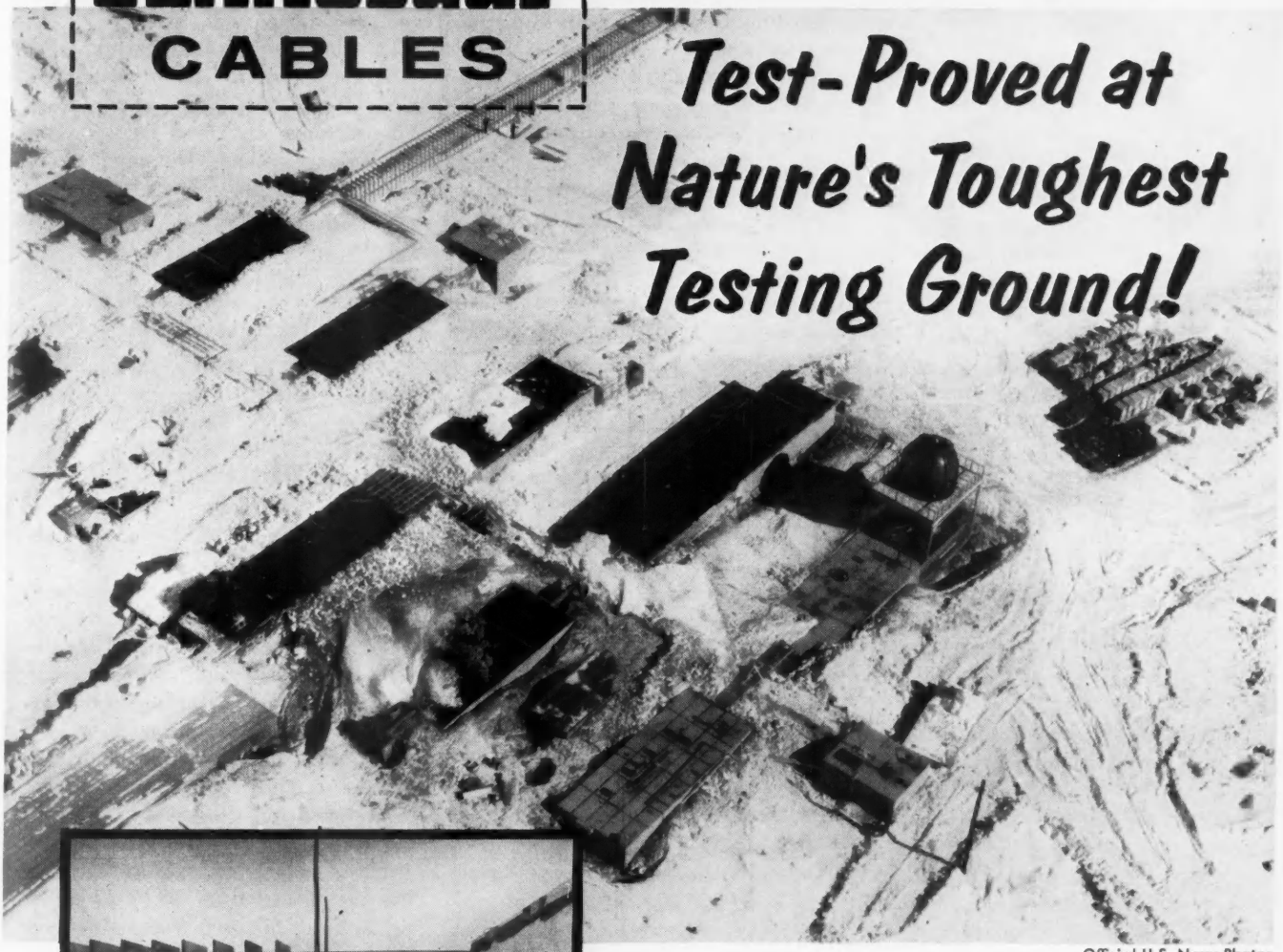

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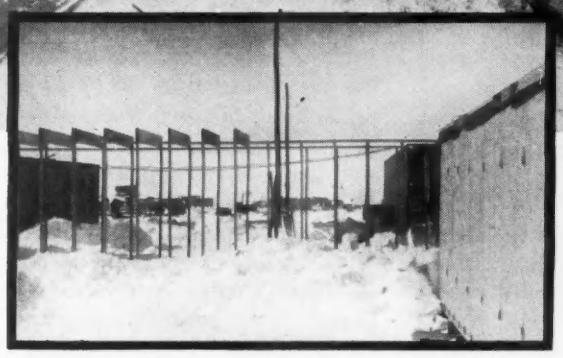
Official U.S. Navy Photos



In Antarctica, reliable communications are vital to the success of Operation Deepfreeze. The lives of men and the safety of equipment *demand* accurate transmission of information and instructions.

Ankoseal Rural Distribution Wire was specified for telephone, intercom and control circuits because it is simple to install, easy to maintain, and adaptable to emergency service. Indoors at Little America V, this versatile wire is strung from rafters in snow covered tunnels and buildings . . . outdoors it is strung on poles and sometimes it is simply laid on the snow. Under all conditions this Ansonia wire has passed every rigorous test!

Ansonia Ankoseal Cables are engineered to meet your most exacting requirements. They are built up to a standard, not down to a price. Whenever you require *dependability . . .* specify *Ansonia Ankoseal Cables.*

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Self Supporting Cables

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Efficient—Solder lugs, clamps, line splices; heat; braze. Whatever the job, fully adjustable pressure regulator assures the *exact* flame. No fumes, smoke, or soot.

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expanded and improved. Radio toll circuits will be installed between the park and the company's toll center at White City, replacing the present limited land line toll circuit to a connection with the West Coast Telephone & Telegraph Co., will be continued by that company. Columbia Utilities does not currently offer that type of commercial service except through connections with the Pacific company.

The Columbia company recently received authority from the Federal Communications Commission to install radio toll telephone service between its White City toll center and the Howard Prairie Reservoir project. Work is now under way and service is expected to be available soon, Hood reported.

The company's plans include installation of radio toll circuits between White City and Lake of the Woods resort, Diamond Lake resort and Toketee village. Diamond Lake and Lake of the Woods are now served by a single wire line which will be replaced by the more dependable radio facilities. The company expects to install a small dial exchange at Toketee early next year.

Front Cover Story

Carolina Tel. & Tel. Co. Completes $2,000,000 Microwave System

THE MAYORS of Eastern North Carolina's two largest cities had an opportunity to discuss the growth and development of their prospective communities on July 2 when they made and received the first telephone call of North Carolina's first telephone microwave system.

The first official long distance call over the Carolina Telephone & Telegraph Company's recently completed $2,000,000 microwave system between Fayetteville and Rocky Mount was originated at Fayetteville by Mayor George B. Herndon and was completed to Mayor P. K. Gravely at Rocky Mount. The first official message over the microwave system originated at the microwave station at Fayetteville and traveled through the air via repeater stations located near Dunn, Princeton and Wilson and terminated at the microwave station at Rocky Mount.

Both Mayor Gravely and Mayor Herndon expressed their appreciation to the telephone company for the establishment of this new and modern communication facility and commended the company for its foresight in providing facilities for future communication needs of Eastern N. C.

Placed in service July 2 at 3:00 p. m., the new microwave system has the capacity to carry some 150 simultaneous long distance conversations. Telephone company officials pointed out, however, that the capacity of the system can be stepped up to a maximum of 3,000 simultaneous conversations with additional equipment.

Completing the system involved construction of main transmitting and receiving stations at Rocky Mount and Fayetteville and repeater stations near Dunn, Princeton and Wilson. Telephone messages travel through the air from station to station along this route.

Designed to withstand winds of hurricane velocity, the steel towers range in height from 150 to 250 feet and are spaced from 16 to 27 miles apart. Since microwave signals travel in straight lines, the tower heights and their distance from each other is determined by terrain.

At the base of each tower concrete block buildings housing necessary equipment have been constructed. Part of this equipment includes auxiliary power. A complex alarm arrangement has been designed for the system which will report various types of trouble or irregularity to a central point at Rocky Mount. Even the opening of one of the doors to the buildings located at the base of the towers is reported by the alarm system. In the event of an equipment malfunction, stand-by channels and switches of the system automatically switch to another channel without interruption of telephone service.

The new system was constructed to provide an immediate as well as a long range means of hauling long distance traffic from northeastern North Carolina to a sectional switching center at Charlotte and out of the Fayetteville area to points south.

New Rates Approved For Cassadaga Telephone Corp.

THE NEW YORK Public Service Commission has accepted a tariff amendment filed by Cassadaga Telephone Corp., designed to increase its rates by an estimated $3,886 annually. The company provides service to about 700 stations in an near Cassadaga, Lily Dale and Stockton, all in Chautauqua County. Toll-free service is also provided to Jamestown Telephone Corporation's Sinclair exchange which serves about 600 stations. It converted its operation to dial service last June 29.

Under the new tariff, 4-party residential rates will be increased by 25 cents monthly and other residential rates by 75 cents monthly. Business rates will be increased by 75 cents monthly for 4-party service, by $1.00 monthly for individual, 2-party and 10-party rural service and by $3.05 monthly for private branch exchange trunks.

In filing its new tariff, the company reported that its plant investment has increased from $59,100 at the beginning of 1955 to more than $201,000 at the present time as the result of dial conversion and said that additional revenues were needed to enable it to continue adequate service and to earn a fair return on its investment.

Kansas Commission OK's Loan For Palco Phones

THE KANSAS Corporation Commission has authorized Rural Tele-Phone Service Co., Lenora, to borrow $190,000 from the REA to rebuild its Palco exchange and lines, which were wiped out in the March 22 blizzard.

At the same time the Palco exchange will be converted to dial service, said KCC chief engineer Lloyd Shank.

In other orders issued last month the KCC took the following actions: (1) United Telephone Association, Dodge City, which had requested permission to increase its rates by about $25,000 a year for six Southwestern Kansas exchanges, was authorized a $16,227 annual rate increase; (2) Complaints of telephone users at Peck, southwest of Wichita, resulted in KCC deciding to issue order giving Peck Mutual Telephone Co. 60 days to formulate plan to rehabilitate its system and the financing to support it; (3) Southwestern Bell Telephone Co. was allowed to withdraw four-party residential service at Enterprise, Howard, Independence, Meade, and Scott City.

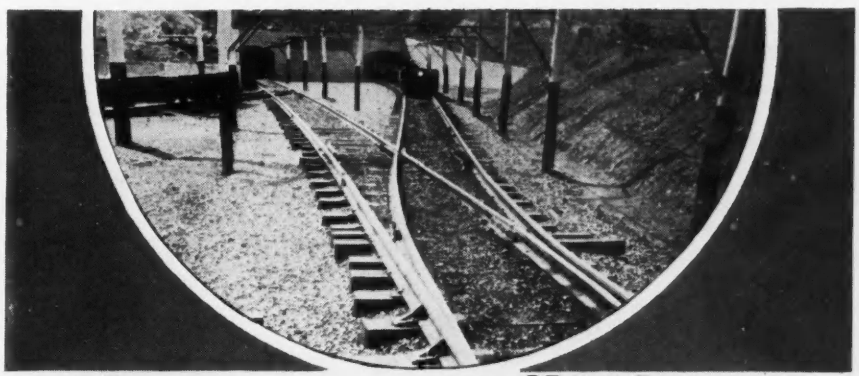
American Tel. & Tel. Plans $250,000,000 Bond Issue

AMERICAN TEL. & TEL. CO., plans to offer $250,000,000 of bonds at competitive bidding. Although the company said it will not open bids until Oct. 29 on the bonds that will be dated Nov. 1 and mature on Nov. 1, 1983, Wall Street investment bankers have said A.T.&T. will almost certainly have to pay a higher rate of interest than it had to pay for its previous issue, sold four months ago.

"If we sold the bonds today," said A.T.&T. treasurer John J. Scanlon, "it's unlikely we would do as well as we did in March."

A.T.&T. accepted bid of 4.34% on March 26 for $250,000,000 of bonds sold to group of 173 underwriters headed by Morgan Stanley & Co. This interest rate was lower than had been anticipated, but it was still costliest obtained by A.T.&T. on its own securities since early 1930 when it sold $150,000,000 of 35-year 5% convertible debentures at 5.22%.

Wall Street Journal reported bond market has improved during past few weeks, but interest rates are still considerably higher than they were in mid-March and may well go high-



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er before A.T.&T. markets its bonds. One investment banker, for instance, said if A.T.&T. brought its bonds to market today, it would have to pay from 4.9% to 5% if it made them callable, but only from 4.7% to 4.75% if it made them non-refundable for five years. Another banker said both types of bonds would need rate of at least 5% and possibly even more.

Mr. Scanlon said the matter of adding non-refundable feature or any other "sweetener" has "not been resolved as yet" and indicated that decision will not be made for some weeks to come.

Use of "sweetener" to cut borrowing costs has been used by two of A.T.&T.'s subsidiaries. On June 18 Southern Bell Tel & Tel. Co. sold $70,000,000 of 29-year debentures at interest cost of 4.91%. Lofty rate came about despite fact that securities are non-callable for first five years. On July 9, Wisconsin Tel. Co., obtained net interest cost of 4.47% in selling $30,000,000 block of 35-year debentures. This issue was sugared up shortly before offering by raising redemption price of debentures to 110 for first five years.

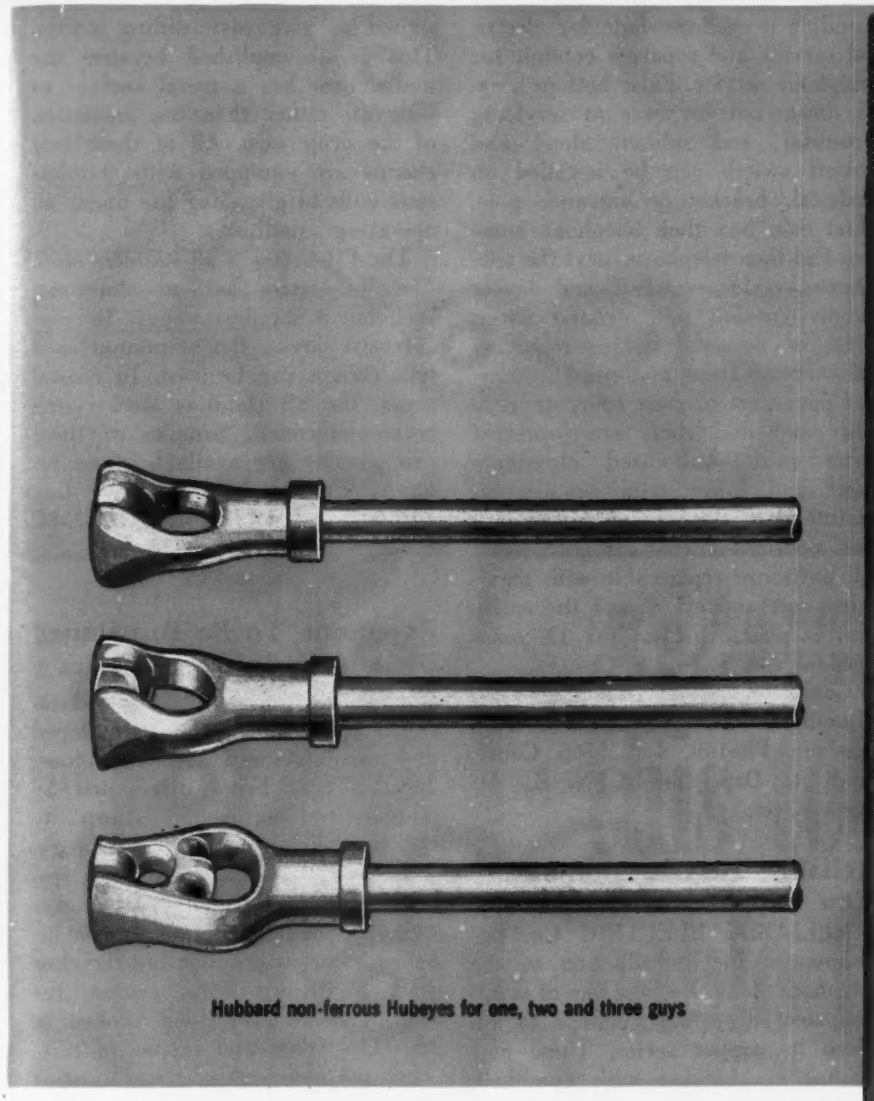
Northern Ohio Tel. Completes Medina DDD Installation

DIRECT Distance Dialing, was established by Northern Ohio Telephone Co. at its Medina exchange last month. This service was also made available to the subscribers at Wadsworth, Montrose, Brunswick, Sharon Center, Seville, and Leroy. Approximately 16,000 telephones were involved in the change.

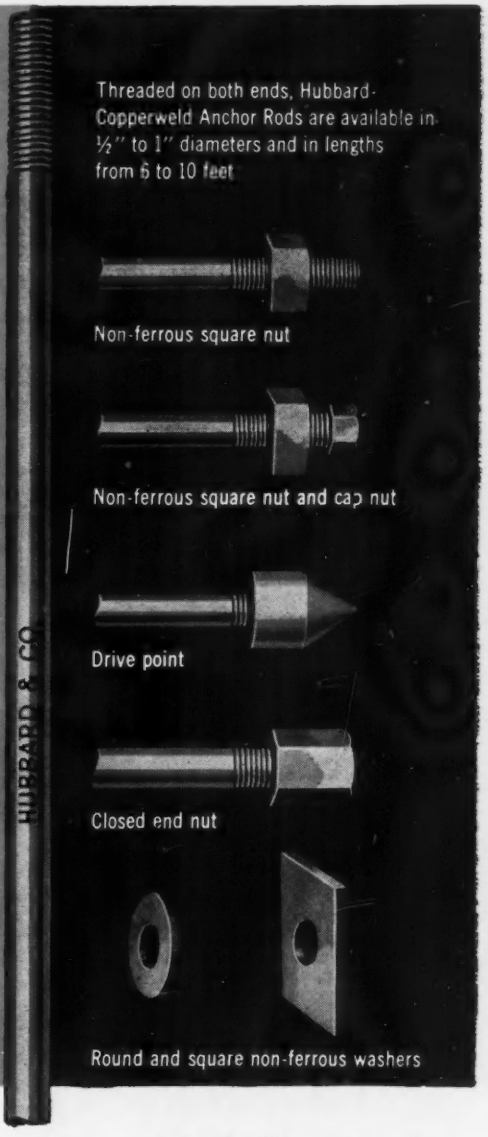
At Medina a two-story fire-proof brick building was provided for completely new central office equipment. Cost of the new equipment and building was $800,000.

While many of the long distance calls will be dialed directly by subscribers, a new 20-position toll board is provided for handling calls which must be worked by operators.

Northern Ohio Telephone Co. is one of the pioneers in Direct Distance Dialing. Although some telephone exchanges provide Direct Distance Dialing in some form, there are only three other exchanges in the United States with full Direct Distance Dialing and automatic identification of multi-party lines. The three exchanges are located at Pekin, Ill., Gibsonia, Penna., and Gilroy, Calif.



Hubbard non-ferrous Hubeyes for one, two and three guys


HUBBARD & CO.
Threaded on both ends, Hubbard-Copperweld Anchor Rods are available in ½" to 1" diameters and in lengths from 6 to 10 feet
Non-ferrous square nut
Non-ferrous square nut and cap nut
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Hubbard-Copperweld Anchor Rods last like copper... hold like steel

Corrosive soils and surface water, perpetual enemies of anchor rods, more than meet their match when they attack Hubbard-Copperweld Anchor Rods. The molten-welded copper exterior of the rod provides the permanence of copper to prevent rust and corrosion. The steel core assures a strong, dependable anchor for overhead lines.

Hubbard-Copperweld anchor rods and accessories are carried in stock and sold exclusively by leading electrical distributors everywhere. A phone call to your nearby Hubbard Distributors' storeroom will bring immediate deliveries to your warehouse.

When you specify Copperweld you get quality. When you specify Hubbard you will get extra quick service. You are sure of an ample stock of the right sizes and combinations for your job. Deliveries are fast . . . more than two hundred electrical distributors handle Hubbard Hardware. There's one near you.

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LIVE BETTER ELECTRICALLY

Wilgus Named Sales V.P. Electric Products Co.

DIRECTORS of The Electric Products Co., Cleveland, Ohio, have elected Harvey B. Wilgus to the position of vice president in charge of sales. Mr. Wilgus has been general sales manager since joining the company September 19, 1955.

Mr. Wilgus was formerly general sales manager of Redmond Co., Inc., Owosso, Mich. Before joining Redmond in 1948, he had been with Barth Stamping & Machine Works, Inc., Cleveland, Ohio; Hercules Powder Co., Wilmington, Dela.; and the Pennsylvania R. R., Philadelphia.

Gladwin Plastics Announces The New "Boothette"

GLADWIN Plastics, Inc., Atlanta, Ga., has announced production of "The Boothette," which has been designed for three types of coin telephone installations: (1) For side-walk locations where the unit is pedestal mounted like a parking meter or wall mounted on buildings, building nooks or entrance ways; (2) for drive-in locations — highway, roadside parks, and off-highway locations such as service stations, drive-ins and shopping centers; and (3) for indoor locations.

New "Boothette" is brightly lighted and attractive. White plastic dome with red letters draw user's attention.

According to the manufacturer the "Boothette" is shipped complete ready for installation.

The unit has been carefully engineered for the telephone industry. The coin collector mounts on hollow steel shaft welded to a steel base. Conduit in hollow shaft for electrical service and separate conduit for telephone service. False bottom hinges downward for ease of servicing protector, and sub-set. Meter and cut-off switch can be installed on pedestal, bracket or entrance pole. First coin box then telephone housing and then telephone, next the telephone service, conduit and power supply conduit and ground wires, must be removed before removing "Boothette" from mounting.

Upper part of coin collector, coin slots and dial shaft are protected from rain. Annodized aluminum shelf and lower trim require no maintenance. All steel is coated with rust resistant enamel or galvanized. All parts are replaceable with maximum cost and effort and the entire unit is plastic proven for 12 years outdoor use.

Complete information on the "Boothette" may be obtained from Gladwin Plastics, Inc., 165 Courtland St., Dept. T-E-M, N. E., Atlanta 3, Ga.

Reliable Electric Announces New Drop Wire Clamps

RELIABLE ELECTRIC Co. has announced the introduction to the telephone field of a new line of stainless steel drop wire clamps to replace its copper series. These new clamps are for use with dumbbell, parallel non-reinforced, parallel reinforced and twisted pair drop wire.

Some models of the new clamps feature a smooth shim which is designed to give easy sliding action. This is accomplished because the wedge now has a metal surface to slide on rather than the insulation of the drop wire. All of these new clamps are equipped with stainless steel balls to give long life under all operating conditions.

The P-1 series is all stainless steel. The P-2 series has an aluminum shell but a stainless wedge. In non-corrosive areas, the aluminum shell type clamps can be used. In coastal areas, the all stainless steel clamp is recommended. Samples of these new clamps are available upon request. Write Reliable Electric Co., 3145 Carroll Ave., Dept. T-E-M, Chicago 12, Ill.

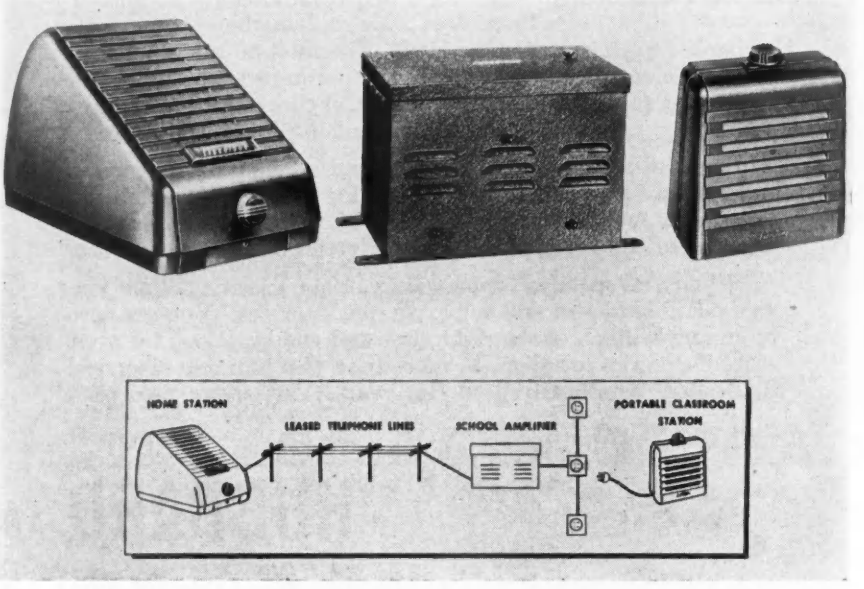
Executone To Be Distributed By Automatic Electric Sales

THE SCHOOL-TO-HOME educational system for shut-ins developed and manufactured by Executone, Inc., is now being distributed by Automatic Electric Sales Corp., to the Independent telephone industry.

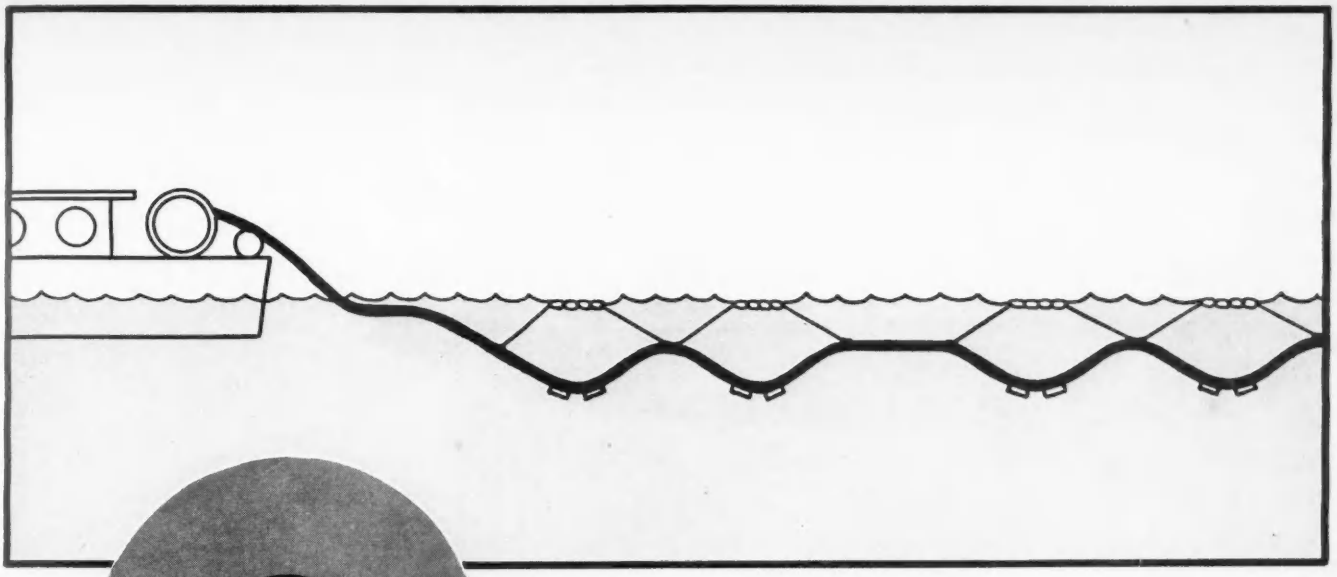
A direct telephone line, with special equipment at each end, makes two-way communication possible between home or hospital and the class room. With his home station, the shut-in hears everything spoken in the class room and recites in turn. The portable class room station brings his voice to the teacher and others in the class room.

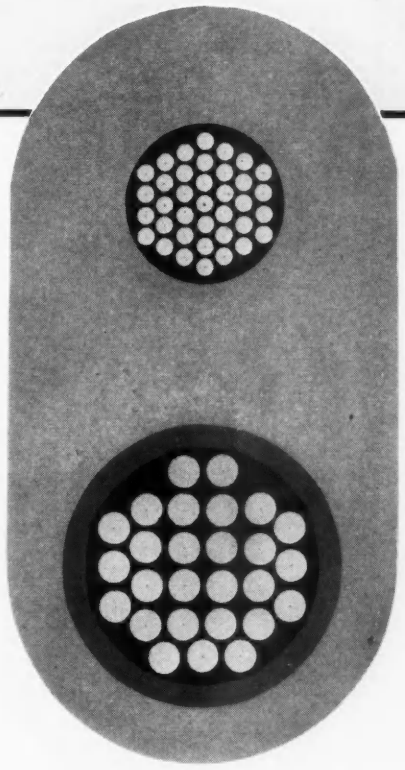
Home or hospital bound elemen-

Please turn to page 78



EXECUTONE school-to-home educational system which is now being distributed by Automatic Electric Sales Corp. to the Independent telephone industry. Diagram shows how equipment is linked in typical installation.





Insulated with
BAKELITE Brand Polyethylene,

this telephone cable floats!

This cable, called Vector Distributed Buoyancy Floating Cable "floats" with pressure-sensitive phones submerged at about a 12-foot depth. The stress-core and multi-conductor electrical cable are continuously extruded side by side in a sheath of cellular polyethylene with extreme lightweight and buoyancy. Thus, one thousand feet of "floating" cable weighs only 725 lbs., and can be wound on a reel only four feet in diameter.

Special cable used for seismic recording for offshore oil exploration is an unusual example of the versatility and efficiency of wire and cable insulation made of BAKELITE Polyethylene. The new floating cable has demonstrated more than three times the useful life of older types.

Lightweight, highly inert to chemicals, salt water and corrosive atmospheres, tough and flexible, insulation made of BAKELITE Brand Polyethylene is your assurance of dependable performance.

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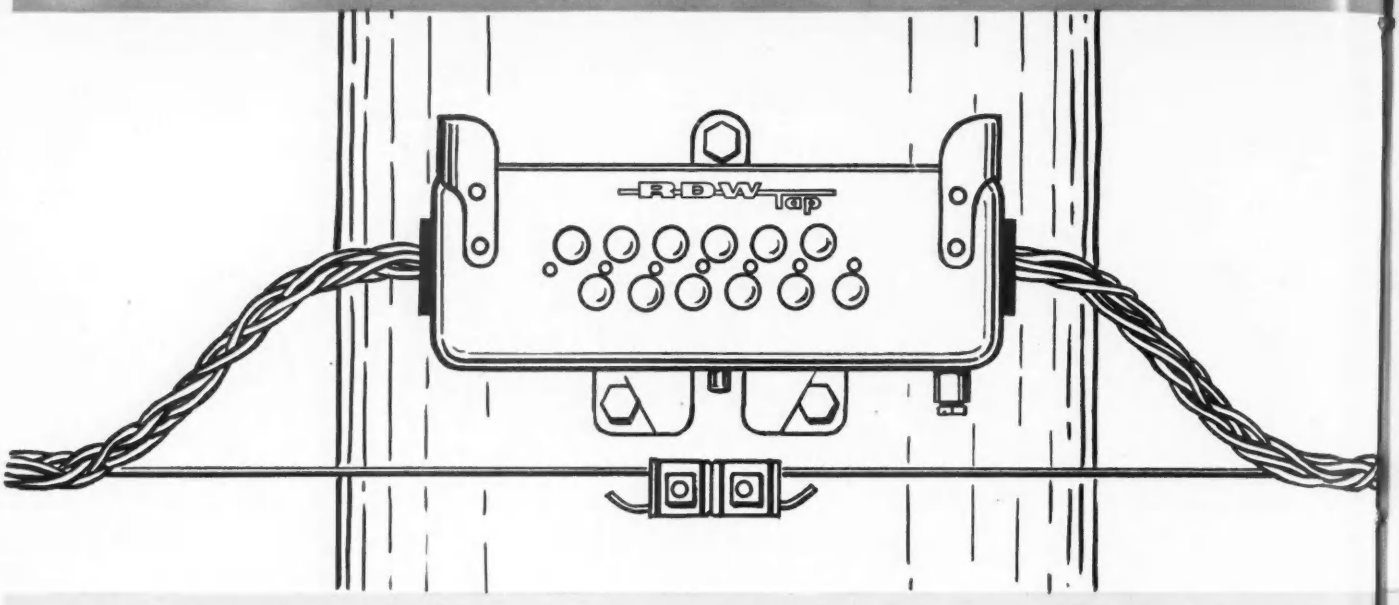
FOR THE FIRST TIME

A SIMPLE RDW* Tap



NO CUTTING
NO SPLICING
NO TAPING
NO ADDED IMPEDANCE

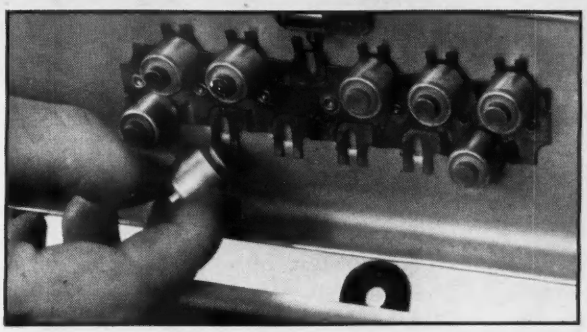
Just a logical and economical method of connecting subscriber drops to the rural distribution wire running straight through the RDW TAP. Installation of the unit has been greatly simplified by the following:

1. Mount the RDW TAP with the lag screw bracket to the pole without gaining.
2. Provide adequate RDW line slack.
3. Cut out the excess RDW messenger line slack.
4. Anchor cut ends of RDW messenger wire to pole below the RDW TAP.
5. Separate selected pairs and connect to face plate studs without cutting or splicing.
6. Insert drops and connect to designated studs.

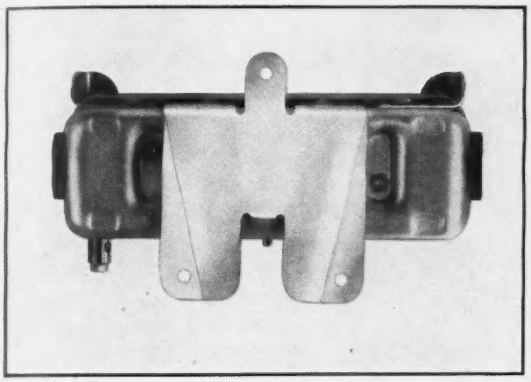
The RDW TAP provides a low-cost maintenance test point, and additional drops can be installed without opening splices or installing additional equipment. Sizes range in 6, 11 and 16 pair capacities.

Protection is optional but can be added later on a pair by pair basis with Cook Minigap or Mytigap arresters.

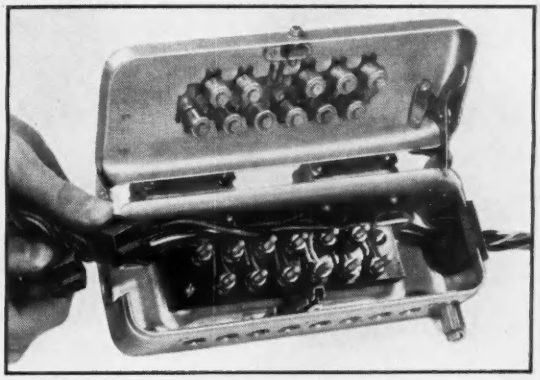
*Rural Distribution Wire



RDW TAP contains the salient features of the Cook Stranterm.



Bracket for mounting direct to the pole without gaining.



Split grommets provide straight through wire installation.

Optional pair protection, accessible studs and room to sort selected pairs is provided by this compact assembly.

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Sturgis designs a new all purpose chair

for America's army of men and women office workers . . .

The seat is thick with foam rubber. The posture-curved backrest cradles the small of the back in still more foam rubber. And you can scuff the fiber glass base incessantly—you'll never mar it. It's a comfortable chair, a rugged chair, and best of all, a low priced chair. Ask your Sturgis Dealer to show you the 840-G. The Sturgis Posture Chair Company, Sturgis, Michigan. Address inquiries to The Sturgis Posture Chair Company, General Sales Offices, 154 East Erie Street, Chicago 11, Illinois.

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tary, high school, and college students with cardiac, orthopedic, muscular, fracture, contagious and other disabilities can continue their classes by these means.

Telephone companies normally can provide this service for from $15 to $25 per month, depending upon the distance and the number of class room outlets.

Although the equipment is being offered as another in the growing number of special telephone services, available to the public, a principal value to the telephone company is goodwill and improved public relations; "providing this service to a shut-in almost always results in favorable publicity to the local exchange," telephone companies say.

Although the cost of this service is usually paid for out of regular school funds, special state-aid reimbursement is available for it in many states. In addition, local civic and social service organizations frequently contribute towards its cost.

Kellogg Swbd. Names Cheney To Regional Manager Post

CHARLES F. CHENEY has been named Northeast-Central Regional Manager of Kellogg Switchboard & Supply Co., a Division of International Telephone & Telegraph Corp., according to an announcement by O. C. Bailey, general sales manager.

Cheney will direct over-all operations of the Northeast and Central Divisions and he will have the commercial responsibility for all Kellogg products in the areas of telephone communications, microwave, carrier equipment and industrial components.

CHARLES F. CHENEY

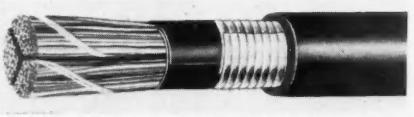
His headquarters will be in Passaic, New Jersey.

Cheney joined the Kellogg organization in 1949 as a sales representative in the New York, Pennsylvania and Ohio territory. In July, 1953, he was promoted to the position of manager of the Central Sales Division, Mansfield, Ohio. He was transferred to Chicago as manager of the Chicago Division in August, 1954, and he retained this post until May, 1956, when he qualified for the Sloan Fellowship which enabled him to participate in MIT's Executive Development Program.

General Cable Manufactures Fully Color Coded Alpeth

ALPETH telephone cable is now being manufactured by General Cable Corp., and is readily available and distributed through Automatic Electric Sales Corp. and Leich Sales Corp., Chicago, Ill.

Alpeth, manufactured by General Cable under a Western Electric patent license, consists of a core of poly-



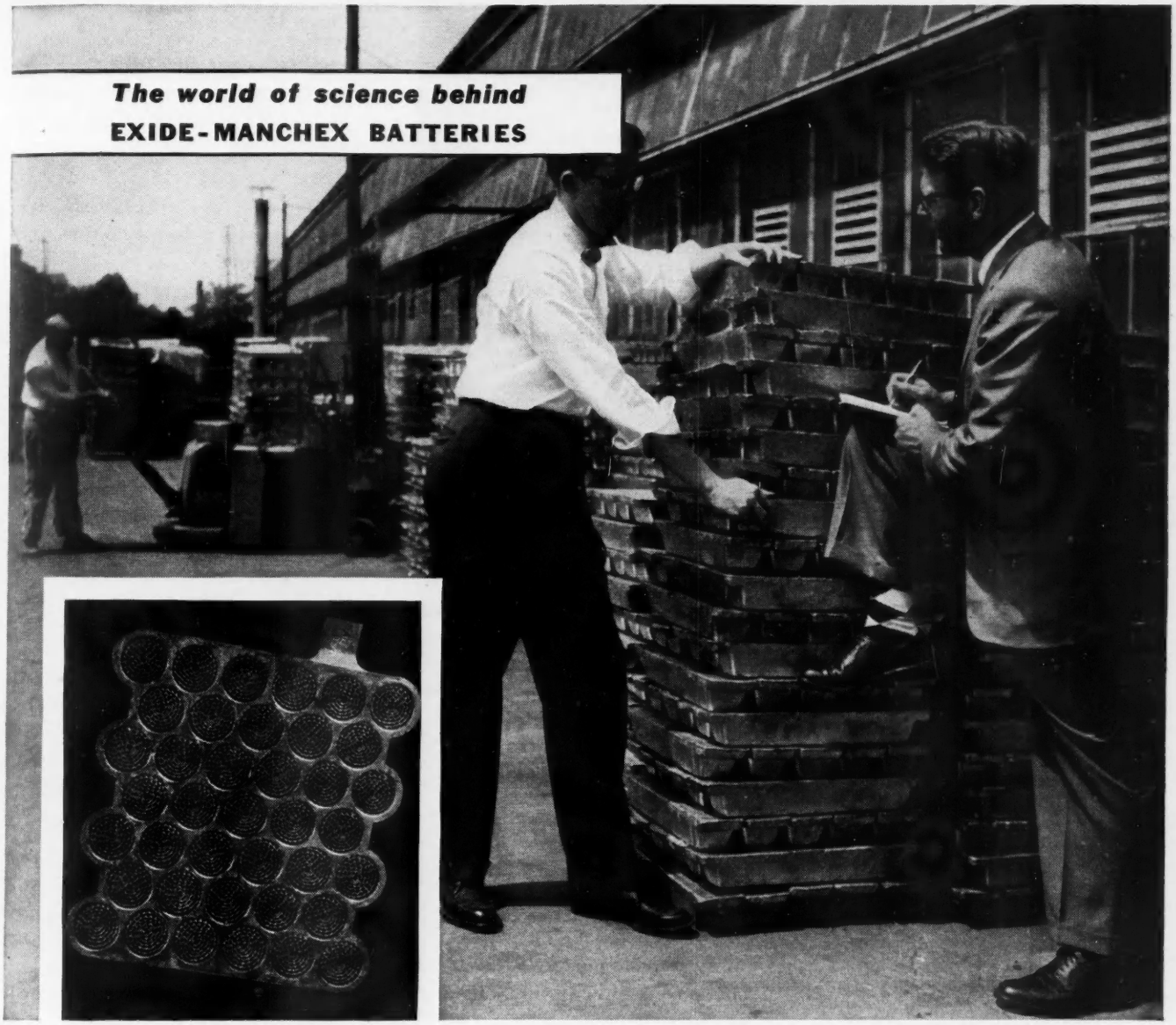
ALPETH COLOR-CODED CABLE

ethylene insulated conductors, a mylar backed rubber core tape, a longitudinally applied aluminum shield which provides a low shield resistance and a heavy duty high molecular weight polyethylene sheath overall. Cables having a core diameter over 0.67″ are made with a corrugated aluminum shield to insure flexibility.

The color coding for this improved telephone cable is confined to pairs 1 thru 26 thus providing a simple easily memorized color coding sequence. Full color coding allows identification of any pair in the cable by the colors of the pair and the binder. The necessity for ringing out conductors is eliminated, and use of this cable with ready-access terminals permits association of pair numbers and colors on cable record cards so the assignment clerk can readily identify to the installer the circuit pair connection to the drop.

Alpeth is designed for Aerial and Duct use. For direct burial, DS Alpeth (double sheathed) is available. Both of these cables are manufactured in 11 thru 404 pairs in 19, 22, 24, and 26 gauge.

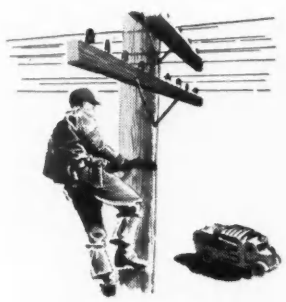
The world of science behind EXIDE-MANCHEX BATTERIES



Being interviewed is J. P. Malloy, Chief Control Engineer. Shown at lower left is a positive plate from an Exide-Manchex Battery.

"High purity lead prolongs battery dependability"

At the Exide Laboratories—**Reporter:** Just exactly how pure is the lead in Exide-Manchex positive plate buttons, Mr. Malloy?



Malloy: There is less than one-hundredth of 1% active impurity.

Reporter: How do you insure and maintain such a high degree of purity?

Malloy: We test every new batch of lead here in our laboratory before we approve it for use.

Reporter: How does this high purity lead extend battery dependability?

Malloy: It converts to active material at the proper rate. Over years of use, these Exide-Manchex Batteries retain their capacity to provide full power when needed.

Reporter: Obviously, this is an important feature of Exide-Manchex Batteries.

Malloy: Yes it is. But it's only one of the many engineering details that contribute to their long life and high performance.

Note to battery users: Whenever you order batteries for float or cycle service in stationary applications, be sure to specify Exide-Manchex. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Company, Phila. 2, Pa.

THE ELECTRIC STORAGE BATTERY COMPANY **Exide®**

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- Have we got wire
- 3 ways better
- Wire saves poles
- For the country
- Self-supporting
- Look—no tools!
- Tailor-made
- 25-year battery
- Profitable noise
- Weather defier

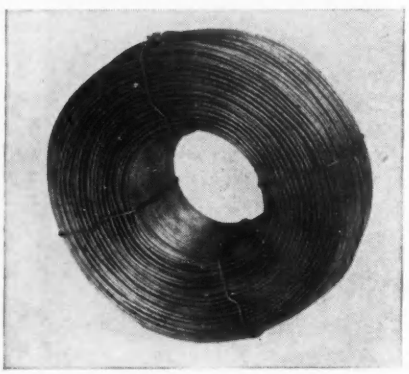
Published regularly to help you get the most out of your materials and supplies dollar

by C. J. Reynolds, Stromberg-Carlson Company

Two dividends are yours when you order supplies from Stromberg-Carlson. First, you get the protection of a double guarantee—ours and the maker's. This assures you of getting the finest products, backed by our 63-year reputation. Second, your support is used to further the art of telephony. We're knee-deep in this industry as a full-time job, not a side line, and your supply business plays a big part and helps us continue our research for new and better telephone equipment.

11 answers to wire problems

Corrosive atmosphere—weather—extra strength—pliability. These are the special problems and needs you run into in wire maintenance. There



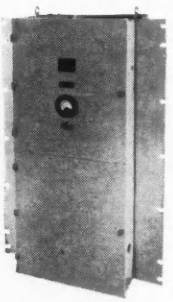
are 11 types of Neale spinning or lashing wire, each built to solve one or more of these problems for you.

.061 Type 316 Stainless Steel
.061 Type 430 Stainless Steel
.090 Copper
.091 Copperweld
.080 Copperweld
.091 Aluminum Alloy
.080 Aluminum Alloy
.091 Galvanized
.061 Galvanized
.091 Special Soft 2.5 Bethanized C-Coating Galvanized
.061 Bethanized 1.5 C-Coating Galvanized

Raytheon Rectricharger® Battery Chargers—Complete Line 3-400 Amperes

Entirely redesigned new Raytheon Rectichargers offer three major improvements:

1. ±1% no-load to full-load stabilization prevents battery overcharging, minimizes gassing, lengthens battery life.
2. No audible hum at output terminals.
3. Most compact units on the market—wall or rack mounted.



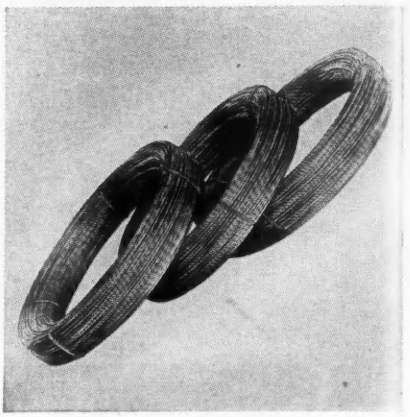
New Raytheon battery chargers feature ±1% no-load to full-load regulation

Automatically compensated for rectifier aging, Rectichargers offer high efficiency, completely automatic regulation. No moving parts and self-protecting circuitry assure minimum maintenance, long life. Single and three phase, 3-400 amps.

Built by Raytheon, supplied to you by your Stromberg-Carlson representative.

Save 10-15 poles per mile

A net saving of 10 to 15 or more pole structures per mile is possible where **Crapo** High-Tensile Telephone Line Wire is used in long-span construction. Fewer pole structures mean substantial savings in time, labor and material, and in maintenance.



Crapo HTL-135 makes possible spans of 350 feet in heavy, 450 feet in medium, and 500 feet in light loading areas. Its practical economy should be considered for new extensions and where old lines are to be replaced.

Crapo HTL-85 (No. 12 B. W. G.) permits spans of 225 feet in heavy, 325 feet in medium, and 375 feet in light loading districts; provides stronger spans on existing pole structures. Both wires possess superior telephonic transmission qualities.

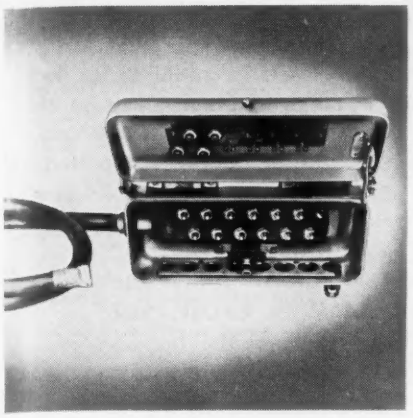
Made by Indiana Steel & Wire Co., Inc. Made available to you by Stromberg-Carlson.

Cable terminal for rural areas

Cook Electric Company's 6-pair "Stranterm" cable terminal is designed particularly for the limited distribution required in rural areas.

Rugged construction, ease of installation, convenience in servicing and maintenance-free operation are some of the advantages you get with the Cook "Stranterm."

This terminal can be installed unprotected and be protected later on a pair-by-pair basis with Cook Minigap or Mytigap Arresters. It is available with a 3½-foot 24-gauge cable stub of lead or plastic-sheathed cable.



Cook 6-pair "Stranterm" cable terminal.

The "Stranterm" cable terminal is compact, light in weight, and very convenient for connecting or changing drops.

Distribution wire needs no cross arms

There are several reasons you can enjoy lower installing costs with this Whitney Blake multi-pair distribution wire.

Because it's self-supporting, it needs no cross arms. And it's easy to string because it's lightweight and comes in long lengths—up to 4000 feet per reel.

Self-supporting distribution wire has built-in messenger.

This wire has excellent electrical characteristics: low-loss transmission, low capacitance, high dielectric strength.

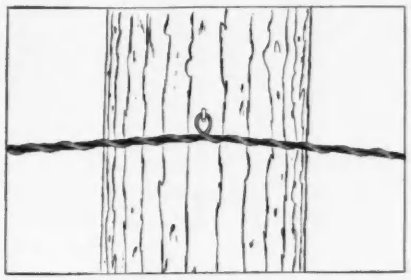
Its polyethylene insulation provides excellent weather resistance.

The wire is available in 3, 6, 11 and 16 pairs. The conductors are of #19 A.W.G. soft copper.

Your Stromberg-Carlson representative will gladly introduce you to the economy of this wire. Call him.

Apply these tangent supports by hand

You can make mid-span supports simply, efficiently and at low cost with Preformed Tangent Supports.



Made of stainless steel, with neoprene coating for protection against corrosion and abrasion.

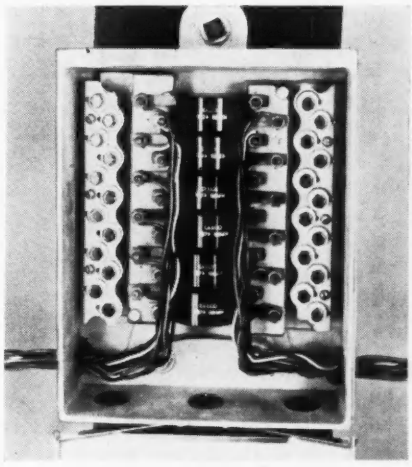
You need no tools to apply these supports. The job is easily done by hand. To install, simply place loop configuration on the wire and then wrap on the legs.

You eliminate cross-talk by giving line wire 10 longitudinal twists, alternating at every other pole.

Winning Combination

You get a combination terminal box and housing for loading coils with the CEECO Type 177 Terminal-Loading Case.

Sturdily made of cast aluminum by Communication Equipment and Engineering Company, it is designed for use with the new rural distribution wire for 6, 11 and 16 pair capacity.

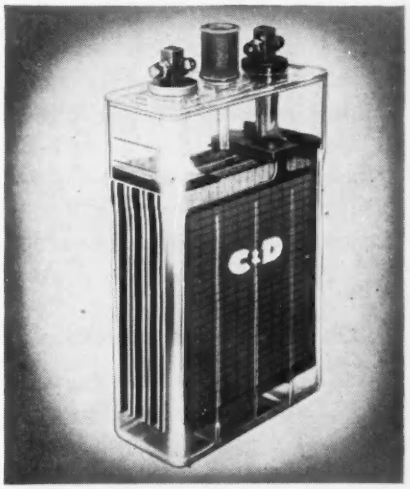


Available in 8 types to meet your needs.

The terminals are designed to accommodate loading coils of 88MH or 44MH inductance. You may order them with or without protectors.

Battery will live 25 years

A quarter of a century is the expectancy of an extra-life battery made by C & D Batteries, Inc. In full-float service, their PlastiCal (lead calcium grids) battery will serve your power needs faithfully —often well beyond its 25-year expectancy.



It'll be 1982 before you even have to *think* about replacing this extra-life C & D battery, if you install it now!

C & D Batteries' PlastiCell (high tensile, special alloy grids) battery offers reliable power supply at lower cost, with a life expectancy of 14 years.

Noise can be money!

Take a business subscriber who has a telephone in some extremely noisy location—and who has finally decided to do something about it.

(*Continued on Page 82*)

(*Continued from Page 81*)

construction and maintenance digest

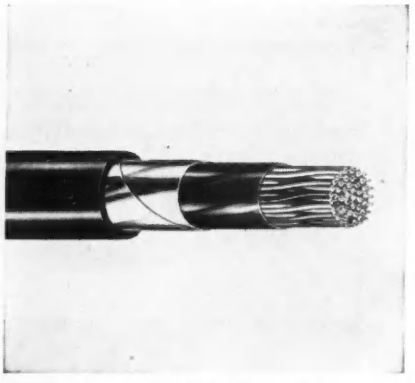
Would you rather have him spend money in building a soundproofed booth—or give **you** the money as monthly income on a telephone which completely licks the noise problem?

The GAI-PHONE is such an instrument. It has a special transmitter that actually creates a "Zone of Quiet" around the handset—even in a spot as noisy as a boiler factory! It costs the subscriber **less** than a booth—and you get the revenue!

Ask us for complete details.

Gives maximum protection

This cable made by Ansonia Wire & Cable Company offers finer electrical characteristics than any other comparable cable.



Available in 24, 22 and 19 gauge, 11 through 404 pair

To get maximum protection against moisture and weather, specify Ansonia Type 775-P Aerial and Duct Cable.

Its conductors are individually insulated with polyethylene and paired with systematically varying lays to eliminate cross-talk. The cable is shielded with aluminum tape and protected by a tough, plasticized polyvinyl chloride jacket.

Distributed by

STROMBERG-CARLSON

A DIVISION OF GENERAL DYNAMICS CORPORATION

Sales Offices: Atlanta 6, Chicago 6, Kansas City 8, Rochester 3, San Francisco

American Steel & Wire Advances George Pyle

GEORGE A. PYLE has been named assistant manager-stainless steel products sales of American Steel & Wire Division of United States Steel Corp.

Mr. Pyle joined American Steel & Wire Division at the Cleveland Cuyahoga Works as a technical apprentice. After a year's training, he was promoted into the metallurgical department at the plant and held posts as laboratory and product metallurgist there until 1947. At that time, Mr. Pyle was transferred to the Waukegan Works of American Steel & Wire to assist in getting that plant's new stainless steel wire section underway.

In 1951, Mr. Pyle was appointed stainless steel division metallurgist.

Pennsylvania Bell Starts "Pagemaster" Service

A VEST-POCKET, radio controlled whistle that can inform a person he's wanted on the telephone even though he's miles away from his phone, was put into service in the Allentown-Bethlehem, Pa. area last month by the Bell Telephone Co., of Pennsylvania.

A spokesman for Pennsylvania Bell, which is a subsidiary of the American Telephone & Telegraph Co., said the service is the first of its kind to be offered by a Bell System Company, and added that if it proves successful it may be extended to other cities in Pennsylvania. An AT&T spokesman in New York said he could not comment on whether or not the service will eventually be made available throughout the nationwide Bell System.

Pennsylvania Bell's pocket whistler is contained in a radio receiver a bit bigger than a king-sized pack of cigarettes that is manufactured by the Stromberg-Carlson Co. It can be carried in a pocket or hand-bag.

When the subscriber is wanted on the telephone, a Bell operator transmits a radio signal that blankets an eight-mile radius and sets off the whistle. This tells the subscriber someone is trying to reach him and he promptly heads for the nearest telephone and dials a pre-arranged number which puts him in touch with the caller.

Pennsylvania Bell says it has already signed up 20 customers for its new service including doctors, TV repairmen and insurance salesmen. The service costs an initial $5 for the whistler, and a minimum payment of $5 per month that entitles the subscriber to 80-calls during the period. All additional calls cost five-cents apiece.

Stromberg-Carlson Names Holt to West Coast Post

ROBERT H. HOLT has been promoted to the position of Service Engineer with the Telecommunication Division of Stromberg-Carlson, a division of General Dynamics Corp. Mr. Holt will make his headquarters in Portland, Ore., and will serve the territory of the Telecommunication Division's West Coast Branch office including the states of Washington, California, Nevada, Utah, Idaho, and Montana.

ROBERT H. HOLT

Announcement of his appointment was made by David Balis, manager of installation and service, Telecommunication Division. Mr. Balis said that Eugene Sullivan, who has been West Coast service engineer for the past several years, has returned to Rochester headquarters for a training program before starting a new assignment with the sales department.

Mr. Holt joined Stromberg-Carlson as an installer in 1951, after two years with the Western Electric Co., in a similar capacity. A year later he was promoted to installation foreman, and subsequently was brought into the division's headquarters in Rochester as a telephone systems engineer. Prior to his original position as an installer, Mr. Holt had been service manager for the Elliott Address-

ing Machine Co. He also completed three years of military duty with the Transportation Services, which took him to Hawaii, Japan, Korea, China, Panama, and Germany.

Collins Radio Creates New Systems Division

COLLINS RADIO CO., Cedar Rapids, Ia., has announced creation of a Systems Division in a move to expand its operation in the complete design, manufacture, installation and maintenance of communication systems of any scope.

In the announcement, L. Morgan Craft, vice president, operations, said "We are currently engaged and expect to expand our operations in the supply of complete communications systems. These systems are now in the fields where microwave and transhorizon transmission are used, and subsequent expansion will probably include systems incorporating single sideband and data transmission.

"Communication systems of this sort not only include the design and manufacture of certain radio equipment but include all or several of the following: design of the system, including required buildings, towers and primary power equipment, as well as the selection of the radio equipment required to perform the expected service; engineering site surveys; construction of access roads and buildings; purchase and erection of towers and antennas.

"In addition they may also include purchase and installation of primary power equipment such as batteries and diesel engine generators; installation of the radio equipment and perhaps other purchased telephone terminal equipment; operational performance testing of the installed communication system, and maintenance and operation of the system."

The new organization integrates all of these activities into the Systems Division, which, like the company's Research and Development Division and Manufacturing Division, reports directly to Craft. John D. Nyquist, formerly director of Manufacturing for Cedar Rapids, has been designated executive director of the new division.

Other appointments include: Frank C. Dyer, director systems engineering in Dallas; and Richard M. Ringoen, director systems engineering in Cedar Rapids.

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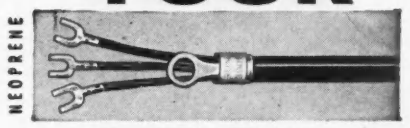
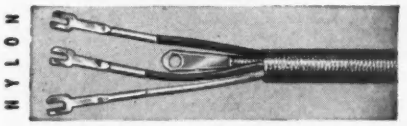
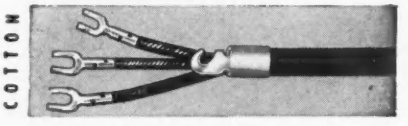


BEST



BUY!



Are you familiar with the features of these fine cords?

NEOPRENE covered cords are a highly serviceable cord, extensively used in a wide variety of services. They are moisture and grease proof . . . easy to keep clean.

NYLON covered cords are a relatively new development in telephone cords. Their fine smooth texture makes them the preferred cords for switchboard use. They give long service. Preferred by operators because of their fast, easy handling.

COTTON cords are in standard use everywhere. Their fine woven wrap makes them very serviceable for all around purposes.

Take your choice—Neoprene, Nylon or Cotton. They're all high quality cords made in accordance with Runzel high standard of quality. We carry a large stock of cords for every purpose.

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Exide Announces Top Management Changes

THREE TOP management changes have been announced by The Electric Storage Battery Co., Philadelphia. They affect the 69-year-old firm's Exide Industrial Division, its Stokes Molded Products Division and Jessall Plastics Inc., a wholly owned subsidiary.

Roland Whitehurst has been elected president of Jessall Plastics, Kensington, Conn. As vice president and

ROLAND WHITEHURST

director of The Electric Storage Battery Co., Whitehurst will continue in Philadelphia as head of The Exide Industrial Division.

Monroe G. Smith has been named general manager of Exide Industrial Division, a position relinquished by Whitehurst because of his added responsibilities at Jessall. Smith also continues as comptroller of the corporation.

At the same time, William C. Leingang, former assistant to the presi-

MONROE G. SMITH

W. C. LEINGANG

dent, has been appointed general manager of Stokes Molded Products Div., Trenton, N. J. He will continue as a member of the management committee of the company.

The changes were made to strengthen the executive structure of the company, according to C. F. Norberg, president.

M. C. Royalty Joins Lenkurt Electric Co.

MARION C. ROYALTY has joined the Commercial Relations staff of Lenkurt Electric Co. as chief consulting engineer.

Although most of his nearly a quarter of a century in the industry has been spent in toll transmission engineering, he also has engaged in teaching, laboratory work and sales engineering.

Royalty's career includes six years with General Telephone Co. of the Southwest in outside plant engineering, a year as instructor in electrical engineering at Texas Technological College, and three years on the Bell Telephone Laboratories technical staff in radar design and development.

Later he returned to General of the Southwest for nine years as a transmission and protection engineer, and recently spent nearly two years with Stromberg-Carlson as Chief Carrier-Microwave Sales Engineer.

A graduate of Texas Tech with the BSEE degree, Royalty is a member of the AIEE, IRE Professional Groups on Communications Systems and Engineering Management, and Tau Beta Pi engineering honor society. He is a Registered Professional Engineer of Texas.

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---LESS over the years
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O-Eighty-Thirty
TELEPHONE LINE WIRE
Any way you look at it, Copperweld* O-Eighty-Thirty is your best buy for subscriber loops and secondary toll lines. It won't rust . . . gives longer service . . . permits safer long spans . . . and requires fewer poles and accessories. What's more, Copperweld "talks better" than any other high-strength conductor. For prices, sag data and staking tables, write us today.
*Trade Mark
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WIRE AND CABLE DIVISION
Glassport, Pa.
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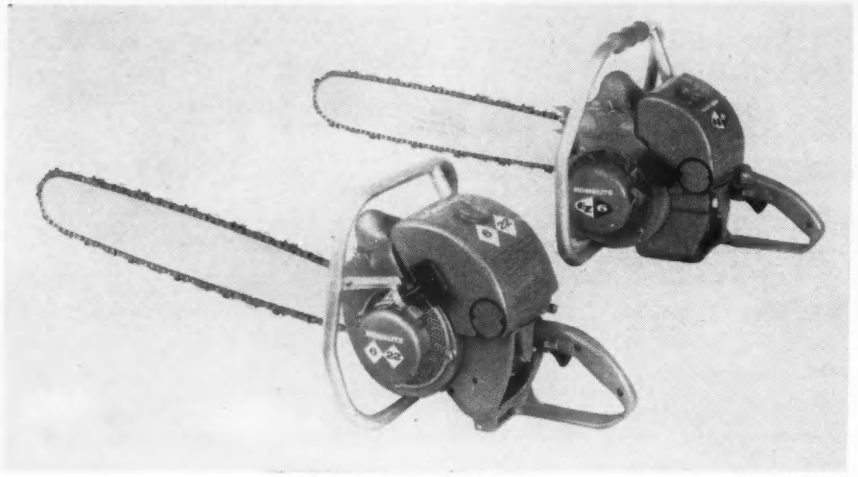
Copperweld
O-Eighty-Thirty
TELEPHONE LINE WIRE
Diameter .080"
30% Conductivity
STOCKED AND SOLD BY LEADING DISTRIBUTORS



New line of chain saws

A TE&M Service Department

NEW PRODUCTS

IN THIS issue our New Products' editor describes: (1) a new line of chain saws; (2) a supporter strap; (3) a new earth-boring machine; (4) K-BAN pole bandage; (5) a new automatic battery charger; (6) a new nylon safety strap; (7) a trouble recorder; (8) and new "see-through" draft stamps.

Chain Saws

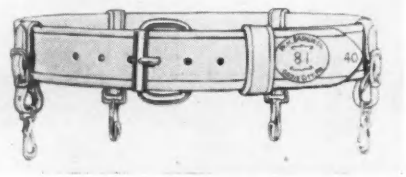
TWO NEW chain saws — Model 6-22 and EZ-6 have been announced by Homelite. Called the Homelite "Power Twins," both new chain saws have a 6 horsepower engine — the EZ-6 is a direct-drive, 19 pound unit; the 6-22 is a gear-drive, 22 pound unit.

According to the manufacturer, "the EZ-6 is the fastest, lightest, most powerful, direct-drive chain saw in the world. With its 6 horsepower, the EZ-6 will cut through 8-inch oak in 4 seconds, 18-inch pine in 12 seconds and bring down trees up to 5 feet in diameter. Its light 19 pounds are perfectly balanced — easy to handle on any cutting job whether it's harvesting woodlots, pruning trees, cutting fence posts hedgerow or cordwood."

The new gear-drive 6-22 is built for hard, everyday use. The 6-horsepower Homelite 6-22 has the lugging power to bring down trees up to 7 feet in diameter — can cut through 20-inch trees in 18 seconds. Light weight — only 22 pounds — precision balanced — the 6-22 is easy to carry, easy to handle, easy to control. A big, new gas tank gives more cutting time without refueling. One of the most important features of the 6-22 is the complete set of attachments that are available for quick switching from a straight blade chain saw to a brush cutter, to a plunge-cut bow-saw and to a clearing tool. For further information, *Check New Product* 178.

Supporter Strap

THE NEW Bashlin #81 Supporter Strap combines safety with comfort in placing the lineman's body belt in the correct wearing position. The supporter strap distributes the weight of the belt and tools evenly when the lineman is on the pole or on the ground.



Bashlin supporter strap.

The strap is made of tough, pliable leather with sturdy snaps to engage it to the belt. — For complete data, *Check New Product* 179.

Earth Boring Machine

A SUSPENDED-TYPE, completely hydraulic earth boring machine which will dig holes 11 to 22 inches in diameter, up to 7 feet deep, and at any angle up to 90 degrees is now being produced by the Highway Trailer Co.

Designated as the Model "B" Digger, the machine was developed after months of planning to fill the needs for a flexible, rugged hydraulic earth boring machine for use in the construction and maintenance of utility lines. It can be front or rear mounted on any type of line construction body, with any type of hydraulic derrick. When not in active use, the new unit is "self-storing" on the roof of the truck.

New hydraulic earth boring machine.

The new earth boring machine will dig in every type of soil including frost and hard-pan. A drive chain crowd assembly assures rapid and smooth downward digging action. The flight auger, featuring a hole-trimming blade, rapidly cuts the hole to the diameter desired for the pole being set. The machine has two independent hydraulic motors which rotate the auger and power the feed mechanism. Both motors are reversible.

The digger unit is suspended from a derrick swivel. The swivel mounting allows complete freedom of movement, pivoting to dig holes for anchoring the pole. The Model "B"

Digger can be positioned so that the derrick is free for pole-setting operations.

On completion of a boring or pole setting operation, the "B" Digger hydraulically retracts to carrying position on the roof of the truck, becoming a "self-storing" unit which takes no valuable truck room for storage. — For complete data, *Check New Product* 180.

Pole Bandage

K-BAN, a new bandage-type treatment for preventing ground-line rot and insect damage to standing poles, is now being marketed by Chapman Chemical Co.

This bandage, which uses Pentaclorophenol and Sodium Fluoride preservatives makes ground-line treatment extremely fast, easy, clean and economical. Tests have shown that 40 per cent of the strength of a pole 20″ in diameter is in the outer half inch and 68 percent in the outer inch. K-BAN was developed by Forestry Enterprises, Inc., St. Paul, Minn., to protect this outer portion of poles at the ground-line where damage from moisture, insects and soil chemical reaction is common. Chapman Chemical Company is exclusive distributor.

The K-BAN bandage consists of a preservative grease enclosed in an envelope of impervious thermo-plastic coated paper. To apply, the bandage is opened to full 24″ width and wrapped around the pole with about 2″ protruding above the ground-line. Staples hold it in place. Only tools required are a shovel to excavate around the pole, wire brush to remove dirt and damaged wood, and a hammer-type staple gun.

K-BAN POLE BANDAGE to protect the vital ground-line area of standing poles and "change-outs" comes as a completely sealed package with preservative enclosed. A tear-strip makes the bandage easy to open and apply. Sizes for all poles are available.

GROUND-LINE PROTECTION of standing poles to prevent rot and insect attack is made easy and economical with a new pole bandage called K-BAN. Pentachlorophenol in grease and sodium fluoride are contained in the bandage which is simply wrapped around the pole at the ground-line and stapled in place.

The preservative grease used is Chapman Pol-Nu, which contains 10% Pentachlorophenol. Sodium fluoride, a water-soluble preservative, is also included to speed the protective action on extremely damp poles.

The tough paper envelope not only serves as a moisture barrier, but also prevents the powerful preservatives from leaching out into the soil.

K-BAN bandages are available in individual packages in sizes to fit all poles. The individual bandages have a tear strip along thre edges to facilitate opening.

Cleanliness and ease of application of K-Ban bandages makes them suitable for inclusion in line crew equipment for spot use wherever ground-line damage is evident. According to the distributor, this simple treatment should always be applied to "change-outs." It also will add years of service life to old and damaged poles.

For additional information. *Check New Product* 181.

Automatic Battery Charger

A NEW, 60-cell, completely automatic battery charger has been developed by the Walker Division of the Norma-Hoffman Bearings Corp. for use at unattended substations and other locations when stand-by batteries have to be ready for immediate use.

The new battery charger has no moving parts which, says the Walker

BUYERS' GUIDE

ADVERTISING, Directories — *General Telephone Directory Co., 1800 Busse Highway, Des Plaines, Ill.*—[ADV. 1]

BELTS — CLIMBERS — COMPLETE LINEMEN'S EQUIPMENT, *W. M. Bashlin Co., Bashlin Bldg., Grove City 1, Pa.*—[ADV. 2]

BOOTHS—Acoustic Telephones — *Sherron Metallic Corp., 1202 Flushing Ave., Brooklyn 6, N. Y.*—[ADV. 3]

BORING MACHINES, EARTH — *Highway Trailer Co., Edgerton, Wisc.*—[ADV. 4]

CORDS, Switchboard (with or without plugs), Instrument (retractable and regular) and Operators — *Commercial Cord & Supply Co., Inc., 26 Main St., Clifton Springs, N. Y.*—[ADV. 5]

CORDS, Switchboard & Telephone — *Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago 41, Ill.*—[ADV. 6]

PIPE PUSHERS — *Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa*—[ADV. 7]

POLES, Southern Yellow Pine — *Taylor Colquitt Company, 217 E. Main St., Spartanburgh, S. C.*—[ADV. 8]

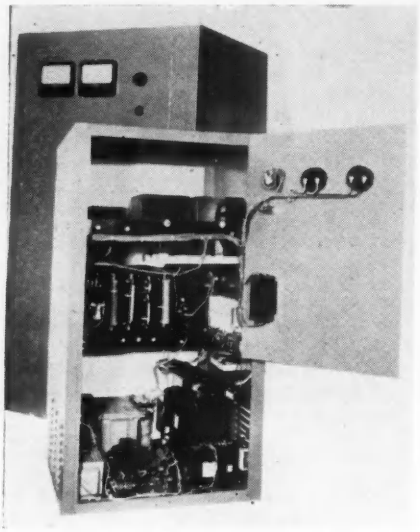
POLES, Southern Yellow Pine — *Texas Creosoting Co., Orange, Texas.*—[ADV. 9]

PROTECTIVE EQUIPMENT — *Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.*—[ADV. 10]

REBUILT TELEPHONES & SWITCHBOARDS — *Telephone Repair & Supply Company, 1760 Lunt Avenue, Chicago 26, Ill.*—[ADV. 11]

WIRE, Insulated — DATED DROP WIRE — Neoprene or Weatherproof — *Alphaduct Wire & Cable Co., New Brunswick, N. J.*—[ADV. 12]

WIRE, Insulated Drop and Bronze or Copperweld — *Acorn Insulated Wire Co., Inc., 36 Freeman St., Pawtucket, R. I.*—[ADV. 13]



THE NEW Walker 60-cell automatic battery charger for unattended substations and other locations.

Division, means no wearing parts and results in practically maintenance-free operation.

Completely automatic in operation, the Walker battery charger eliminates gassing and water loss. The selenium rectifiers have inorganic, non-oxidizing barrier layers which are corrosion and moisture proof and are capable of continuous full load operation in 50°C. ambient temperature without deterioration. The high gain magnetic amplifier control circuit automatically regulates output voltage to ± 1%. The rectifier power circuit is full wave.

The new Walker Automatic Battery Charger is available in 3, 6, 12, 30 and 60 ampere models.—For complete data, *Check New Product* 182.

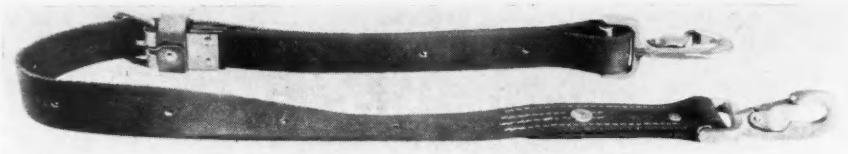
Safety Straps

NEWLY developed Spun Nylon webbing is now used by the Miller Equipment Co., Inc. for its new line of nylon safety straps.

According to the manufacturer this solid woven material, specially double impregnated, has excellent dielectric qualities and is designed with a red center which acts as an automatic signal indicating when "pole wear" calls for strap replacement.

The test specs are as follows: On a straight pull, buckle hole yields at approximately 1550 lbs; when tested as used on a pole, buckle hole yields at 3450 lbs.; (The above tests based on a single tongue buckle.) Cross section breaking strength approximately 5500 lbs.

This newly developed *Spun Nylon* webbing is now available in all stock sizes and is identified with a suffix 'N' added to the strap length required. For complete data, *Check New Product* 183.

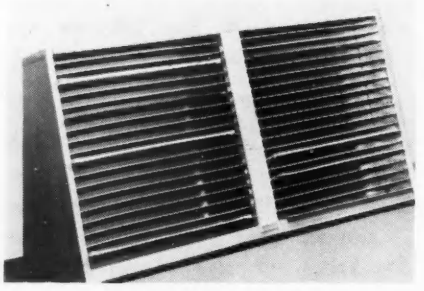


Miller Nylon safety strap

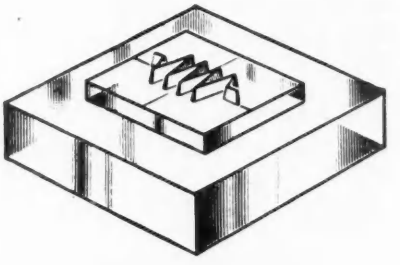
Trouble Card Rack

THE JOB of sorting trouble recorder cards is made easier by the use of this new rack offered by Neubauer Manufacturing Co.

The rack is especially designed to handle the cards used in Bell System cross-bar offices for recording line and service troubles. It has 38 card slots arranged in two banks with an index strip between. Four smooth glides support the rack which measures 38″ x 8″ at the base with a height of 15″. For complete data, *Check New Product* 184.



New trouble recorder



See-Thru Draftstamps

DRAFTSMEN can now save hours of valuable time by stamping routine drawings instead of drawing them individually. All widely used symbols made of engraved, clear vinylite and mounted on See-Thru Lucite are available in complete sets as well as individually.

Razor sharp impressions, hairline accuracy and perfect alignment are guaranteed with See-Thru Draftstamps. Special metal stamp pad insuring 100 percent perfect stamping impressions is available with these stamps. To obtain literature illustrating all symbols *Check New Product* 185.

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NP 183..... NP 184..... NP 185 .....

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ADV. 11..... ADV. 12..... ADV. 13.....

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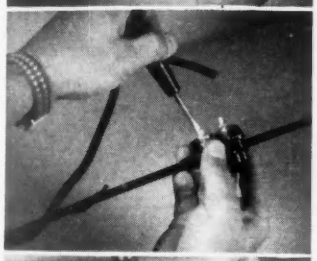
SUPERIOR TERMINAL

SUPERIOR Parallel LINE WIRE

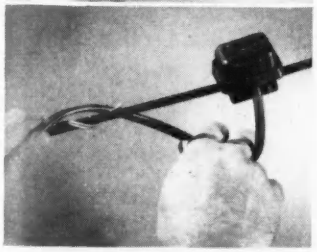
Easy Installation of
SUPERIOR PLWT-1 TERMINAL

Skin line wire insulation.



Fix terminal in place on line wire.

Connect drop wire.



Snap on neoprene terminal cover.

These two great *new* products of the Superior Cable Corporation are closely matched for long life, ease of installation and economy.

The new SUPERIOR PLWT-1 TERMINAL is of an exclusive design . . . is weatherproof and is self-supporting on the line wire. Provides positive and continuous contact of conductors at the point of take-off. Simplifies drop line connections.

New SUPERIOR Parallel Line Wire is completely insulated with high grade polyethylene . . . available with one pair of 12 or 14 gauge copperweld or .083 inch galvanized special steel wire conductors.

The outstanding self-supporting characteristics and low attenuation of SUPERIOR Parallel Line Wire make possible long drop runs to serve subscribers distant from the main pole line at minimum cost. Use in place of open wire for greater economy and efficiency.

For detailed specifications, write

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SUPERIOR CABLE CORPORATION
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THE CLEARING HOUSE

Published in each issue of Telephone Engineer & Management. Advertising forms close on 1st & 15th of month. Rates 15 cents a word except for Situation Wanted ads, which are only 10 cents per word. In figuring cost of ads, count each word of address in number of words used. All ads payable in advance. Minimum charge—$2.00. Special rates for display ads on request. Send copy and box number replies to Telephone Engineer Publishing Corp., 7720 N. Sheridan Road, Chicago 26, Ill.

SITUATION WANTED

YOUNG MAN 35, now earning $10,000 with 10 years experience and engineering degree. Has high type personality and administrative experience with class A company. Direct work experience at top level in acquisitions, dial conversions, toll separation studies, public relations, personnel administration, and successful union negotiations. Will associate with progressive, profit minded company. Resume on request. Write Box 9072, c/o Telephone Engineer Publishing Corp., 7720 N. Sheridan Rd., Chicago 26, Illinois.

HELP WANTED

PLANT ENGINEERS — For large Independent Telephone Company. Some experience necessary. In reply state age, educational and employment history. Address reply to Personnel Supervisor, Rochester Telephone Corporation, 10 Franklin Street, Rochester 4, New York.

MANAGER WANTED: Independent Telephone Co. with 1100 stations in northwestern Illinois wants manager. Must have dial experience and be able to supervise all operations. Write: Port Byron Telephone Company, Woodrow R. Bryan, Manager, 202 S. Main St., Port Byron, Illinois.

WANTED—Young man qualified as applicant for manager of small R.E.A financed Telephone Co-Operative located in South Central Wisconsin. Applicant should have reasonable basic experience in Plant maintenance and qualified to assume management responsibility for system of approximately 500 stations. Send inquiries to Ray Gibbons, President LaValle Telephone Co-Operative, LaValle, Wisconsin.

RADIO ENGINEER. Position offers real opportunity and wide field of service. Applicants should have degree in Electrical Engineering, a State license as professional engineer, well-rounded background in theory and application of radio in field of telephony and working knowledge of F-C-C- radio rules and regulations. Complete resume of education and experience should be submitted to: United States Independent Telephone Association, 438 Pennsylvania Building, Washington 4, D. C.

WANTED: Man with two or more years experience in Traffic Department to develop as an assistant to Traffic Superintendent. Some technical knowledge of central office equipment desirable but not essential. Large telephone company in the southwest. Good wages and working conditions with employe benefits. For interview write, Box 9069, c/o Telephone Engineer Publishing Corporation, 7720 North Sheridan Rd., Chicago, Illinois.

HELP WANTED

CABLE SPLICERS, Station Installers, Equipment Installers, Linemen. Experienced men needed. Steady work, good pay. Henkels & McCoy, 1211 Kenmore Avenue, Elkhart, Indiana, or 6100 N. 20th St., Philadelphia, Pa.

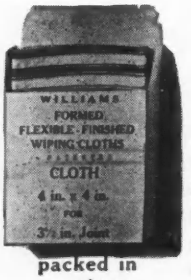
FOR SALE

SACRIFICE — New Western Electric Cross Connection Terminal Boxes, with tails — Type BD. Three 202 pair, One 404 pair. Write McHenry County Telephone Company, Room 300, 16 North Carroll, Madison, Wis.

WESTERN ELECTRIC NO. 392 LOUD BELLS
Refinished and tested, with condenser — $6.00 each.
Telephone Equipment, Inc., Montrose, Mich.

WANTED TO BUY

WANTED: 250-800 Station exchange. Prefer Florida or Southern State area. Reply with details, William Brown, 2635 Southwest 82nd Ave., Miami, Florida.



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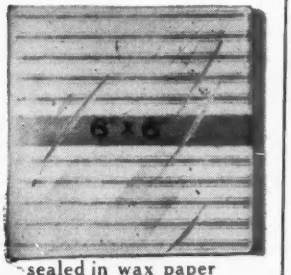
Cable-Splicers

Formed-flexible finishing cloths; (Patented); Flat finishing cloths; Catch cloths; Crotch cloths and Up-right joint catch cloths. Made of world-prize HERRINGBONE TICKING or imported English MOLESKIN. Write for literature and prices.



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3035 Aldrich Ave. South, MINNEAPOLIS 8, MINN.

STROMBERG-CARLSON SWITCHBOARD

5 positions Stromberg-Carlson Junior Multiple Switchboard. Each equipped with 15 universal cord circuits per drawing No. S-10119 arranged for divided code ringing. No. 194-A and No. 193-BB line and cut-off relays. 3 key shelves arranged for but not equipped with type 33 Calculagraph. Equipped for dialing on each cord circuit thus could be used for Toll Switchboard. Protection, Power Supply and Batteries can be supplied if required.

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BUCKEYE TELEPHONE & SUPPLY CO.

Phone HU. 8-0655

P. O. Box 5707 **Columbus 21, Ohio**

FOR SALE

AUTOMATIC ELECTRIC CO. #375A COMMUNITY DIAL SWITCHBOARD
Immediate Delivery
Equipped as follows
200 Subscribers Lines
14 Coin Line Auxiliaries
24 Links
15 Master Office Trunks
20 Inter-Local Trunks
10 Party Code Ringing
1 "A" Frame
1 Supplemented "A" Frame
1 "B" Frame
1 "C" Frame
1 Supplemented "C" Frame
Complete with power Board having two 48-Volt Rectifiers and two Ringing Machines.
TELEPHONE REPAIR & SUPPLY COMPANY
1760 West Lunt Ave. Chicago 26, Ill.

FOR SALE

KELLOGG SWITCHBOARD
AVAILABLE NOV. 3, 1957
See this one first. In service now at Jefferson, Iowa. Excellent condition.
COMPLETE:
Decimonic-Automatic Ringing—3 Appearances
4 Universal Positions 17 Cord ckts each
2 Secret Service Positions 19 Cord ckts each
1200 C.B. Local Lines (Capacity 1600)
40 Pay Station Lines
40 C.B. Rural 24 volt (Reversing Jacks) Lines
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30 R.D. Toll Lamp ended
12 ckts Transfer Service
3 Loop Dial Trks
3 Position Dials & Cords
10 Inter-position Trunks
1 32 line fire grouping ckt
MSC. EQUIPMENT
24 Cells #24DF7 Batteries (good as new)
2 Lorain #V300 D Chargers
1 North #1104 chargers
2400 C Pr. MDF
1300 Pr. Protection (500 cook #100)
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Also available *now* 1000 Decimonic, handset, Koilcord phones.
All good as new, blank for dial. 900, 925, 9817, 64B, etc. All individually boxed.
For information, contact
C. H. DAUBENDIEK, Tel. #662
Box #267, Jefferson, Iowa

SPECIFY
TELERING
for
Dependable and Economical Telephone Ringing Power Equipment.
Engineered for complete satisfaction.
Manufactured by
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GLEN L. GRAWOLS

Glen L. Grawols Retires From Automatic Electric

GLEN L. GRAWOLS has retired from Automatic Electric Co., Chicago.

Comptroller, treasurer, vice president and director are some of the titles Mr. Grawols held during his career with Automatic Electric which began in 1928. Prior to that time, he served as public accounting manager with Arthur Andersen & Co., Chicago.

Born on a farm near Davison, Mich., he attended high school there, later entered Hillsdale College where he received his B. A. degree, and took post graduate work at the University of Michigan and at Northwestern University.

Mr. Grawols expects to divide his time between his homes in Evanston, Ill. and Deerfield Beach, Fla. He will continue to maintain offices at 332 South Michigan Ave. in Chicago from where his various charitable, political education and personal business activities will be conducted.

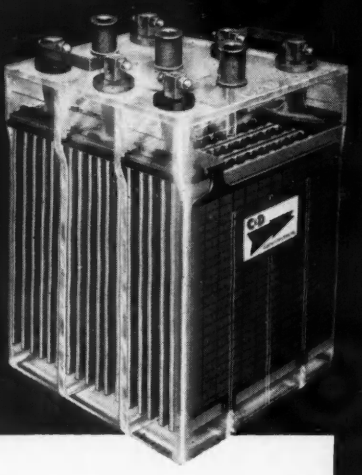
ROBERT C. TAIT, president of Stromberg-Carlson, presents GEORGE E. EYER, vice president-properties, a diamond pin on Mr. Eyer's 50th anniversary with the company. At right is GORDON G. HOIT, executive vice president. Mr. Tait proclaimed the day, July 15, "George Eyer Day" at Stromberg-Carlson, a division of General Dynamics Corp. In 1917, Mr. Eyer first joined Stromberg-Carlson as a file clerk in the company's billing department. He was then a boy of 14, just recently graduated from Rochester's Public School #7. During subsequent years Mr. Eyer continued his education by attending night school classes at both East High School and Mechanics Institute (now the Rochester Institute of Technology), and by taking correspondence courses. These equipped him for the promotions that took him up through the positions of traffic manager, chief of standards, general superintendent, and director of industrial relations. He is a member of the Independent Pioneer Telephone Association, the Telephone Pioneers of America, the Rochester Chamber of Commerce, the Y.M.C.A., and the Rotary Club.

Here's a telephone battery that:

lasts at least 40% longer!

requires 80% less current and water!

delivers high output all its life!



C&D's PlastiCal® is the most outstanding floating-service battery of the last 50 years. Here's a basically new battery that combines a durable, clear-plastic case with lead-calcium* grids. This new alloy of pure lead and calcium gives grids the strength of those with a large antimony content, but eliminates the harmful effects of antimony.

C&D's PlastiCal has these advantages:

1. *a 40% longer life* than any lead-antimonial battery in floating-service. There is no antimony in the PlastiCal to poison negative plates.
2. *requires 80% less current* to maintain itself in a fully charged condition. Lower charging rate means plates last longer.
3. *requires 80% less water.* Because PlastiCal uses less current, there is less electrolysis of water.
4. *low maintenance cost.* PlastiCal can be checked at a glance because the electrolyte level is always visible.
5. *delivers high output throughout its life.* Rated capacity remains steady because negative plates do not become contaminated.

**A development of*
Bell Telephone Laboratories

C&D

BATTERIES, INC.
of Conshohocken, Pa.
Industrial Batteries Since 1906

GET the latest!

For complete information and specifications on PlastiCal—the century's greatest battery development—write for folder T-528 Rev. 3.

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

Stromberg-Carlson Names Assistant Publications Editor

ANTHONY L. CARCHEDI has been appointed assistant publications editor of the Telecommunication Division of Stromberg-Carlson, a division of General Dynamics Corp., accord-

ANTHONY L. CARCHEDI

ing to an announcement by Frederic W. Haupt, advertising manager of the Telecommunication Division.

Mr. Carchedi came to Stromberg-Carlson from the Brunner Manufacturing Co., of Utica, N. Y., where he had been assistant advertising manager. Previously he had been on the staff of the Syracuse Herald-Journal as correspondent for the Utica area.

A native of Utica, Mr. Carchedi attended Utica Free Academy, and was graduated from Utica College of Syracuse University with a B.S. degree in Public Relations. While there he worked on the "Tangerine," weekly newspaper of the college, and became editor-in-chief of the paper in his senior year. His talents were recognized by election to Pi Delta Epsilon, national honorary newspaper fraternity.

From 1948 to 1952 Mr. Carchedi served an enlistment with the U. S. Navy. After training at Great Lakes Naval Training Station, and further instruction at Seattle, Corpus Christi and Memphis, he was sent to Hawaii as an instructor in aviation ground training devices.

At Stromberg-Carlson he will work with George B. Forbes, publications editor, in the general field of telecommunications news articles for trade publications serving this industry, and also will assist in the preparation of customer service materials.

STROMBERG-CARLSON

Transmitter

A DIVISION OF GENERAL DYNAMICS CORPORATION

News and views of Independent telephone people. VOLUME 6, NO. 5 • AUGUST, 1957

Cameron, Louisiana

Courageously reclaims city from silt and water

The wind and the rain from Hurricane Audrey had no sooner subsided, when the surviving citizens of Cameron, Louisiana, began the burdensome task of reclaiming their city from the silt and water and rebuilding the few remaining structures worthy of their efforts.

Among the thousands of buildings completely destroyed were the exchanges of the Cameron Telephone Company at Cameron, Creole and Grand Cheiner. More than $50,000 of XY Dial equipment was ruined by salt water and silt. About 90% of outside plant and 3/5 of inside plant and buildings were also destroyed.

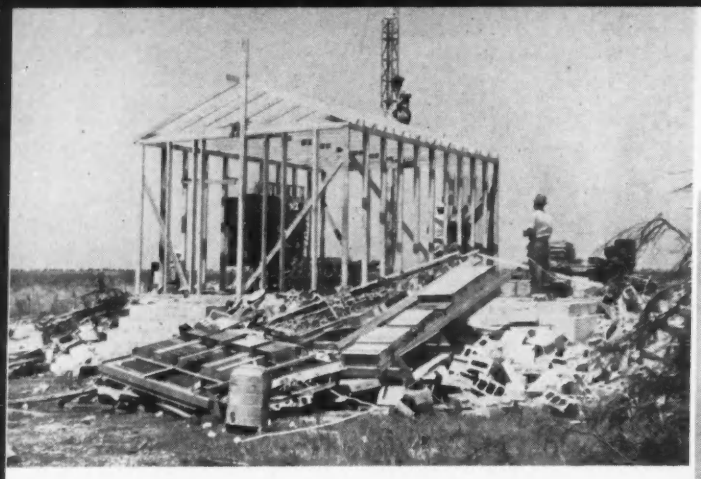
Manager W. L. Henning and J. T. Henning, Plant Superintendent of the telephone company, are typical of the courageous people of Cameron and the area. Knowing the importance of communications at such a vital time, a temporary building was erected in 24 hours to house the usable dial equipment at Cameron.

Helping the Henning's were Glen and Ford Chamblee, microwave and toll ticketing engineers, respectively.

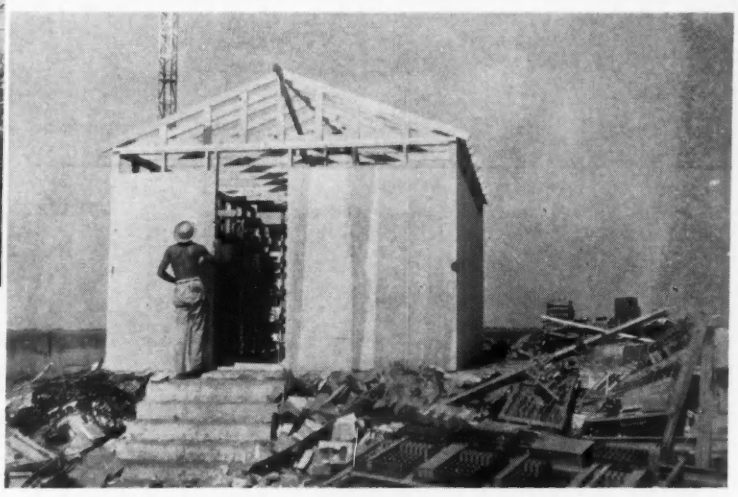
The accompanying photos show only one small part of the destruction caused by the hurricane.

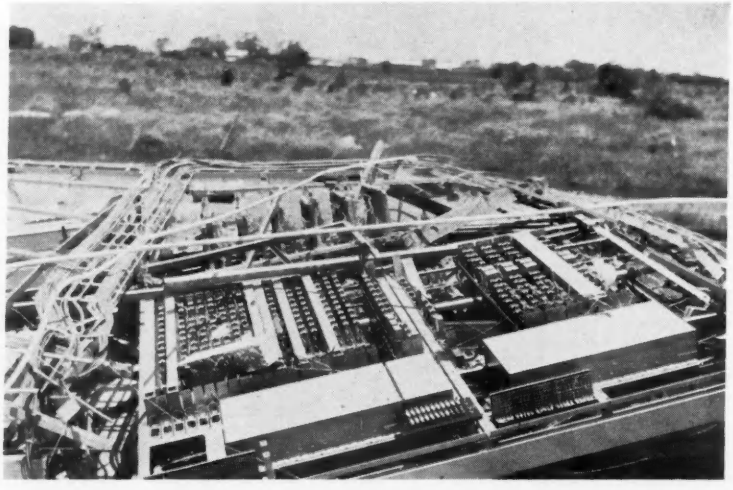
Top photo: This was the road to the Cameron office. Tower at right withstood both wind and rain. Photo below: Close-up of demolished exchange. Gasoline engine-driven generator was for "an emergency."

Rehabilitation under way for Cameron Telephone Co.



Rehabilitation gets under way at Cameron exchange. New building was completed in 24 hours to protect dial equipment salvaged from mud and water.





At left: Mattress draped over lines shows height reached by flood. Above: All instruments were lost; corroded by salt water. Exchange at Grand Chenier could be visited only by helicopter.

St. Ignatius, Montana, now served by XY Dial

Harold Ennis, left, Stromberg-Carlson installer, shows XY Universal Switch, heart of dial equipment, to Douglas and Clyde Payne, owner of the St. Ignatius Telephone Company.

About ten years ago two of St. Ignatius' citizens proved their faith in this community in famous Flathead Valley in western Montana.

Mr. and Mrs. Clyde C. Payne purchased the St. Ignatius Telephone Company in 1948, then with 80 stations, and in less than ten years increased by five times the number of stations serving this farming and cattle-raising area.

St. Ignatius is surrounded by peaks towering over 8,000 feet and lakes and rivers known for their bountiful supply of fish. An Indian Mission School, established in 1854 and still in operation today, serves an important need just as the recent cutover to XY Dial provides efficient telephone service so important to this growing community.

Members of the Independent Telephone Corp. Board of Directors ready for the Sanborn cutover are, L-R: Pierre Stralen, Vice-president; W. Bradford Harrison, Vice-President; William B. Harrison, President; Donald Stralen; A. Marvin Braverman. Other officers are Adrian Leiby and Chauncey P. Williams, Jr., Secretary-Treasurer.

Sanborn, New York:

New XY Dial fulfills demand for efficient service

Families are moving into swiftly growing Sanborn, New York, at a rapid rate, bringing with them the demand for fast, private telephone service — a demand easily fulfilled since the Sanborn Telephone Company cut over to XY Dial.

Since June 1, 1954, when the Sanborn exchange was purchased by the Independent Telephone Corporation, the number of telephones in service has grown from 932 to over 1500 at cutover.

The reasons for this increase? ITC President W. B. Harrison has added incentive to the already-healthy business climate surrounding Sanborn. Just 10 miles east of Niagara Falls, the exchange serves not only industries such as Bell Aircraft Corporation, Carborundum, the Niagara Falls Municipal Airport, but also families and military personnel living in Sanborn, but employed in Buffalo and Niagara Falls.

With this great potential at his doorstep, Mr. Harrison and the ITC carefully planned the Sanborn exchange to satisfy immediately today's demands for telephone service, and prepared for the expected increase of upwards to 10,000 telephones.

The exchange was moved from the center of Sanborn to the center of the large expanding area; Sanborn could become a city "overnight."

Raymond Loewy Associates of New York was called in to design the new exchange and prepare a strong promotional campaign, including envelope stuffers announcing the coming changes in service and large display racks, showing colored telephones, which were installed free to all subscribers of record prior to cutover. Most popular colors were Antique Ivory and Desert Beige.

The problem overcome through this promotional campaign was that of convincing old and new subscribers alike that telephone service in Sanborn would be improved. With the old manual system 14 to 16 parties on a line was not unusual. Now private and 2-party lines will predominate.

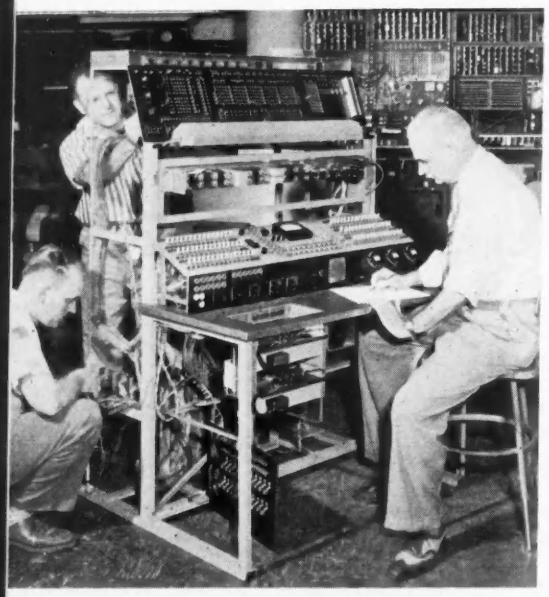
Manager of the new exchange is Omar W. Helme, who came to Sanborn in 1954 from Jasper and Alfred, New York, two other exchanges owned by the ITC. Working with him are: George Lewandowski, wire chief, and Alanson Horton, chief installer.

The cutover to XY Dial has ushered in a new era for Sanborn — an era studied and prepared for by the Independent Telephone Corporation.

Photos clockwise: Enjoying the efficiency of XY Dial are, L-R: William B. Harrison and Omar Helme, Sanborn Manager. Niagara Falls, center for power. Lower right: Operators at board with James Ceratt, installer (1) and Alanson Horton, chief installer for the Sanborn Company. Lower Center: George Lewandowski, wire chief, at test board. Lower left: Mrs. Phyllis Stender (1) and Mrs. Alice Helme stand beside display showing comparison between new Stromberg-Carlson telephones and old magneto wall-type phone.

A miniature factory

Unique department gives 'birth' to special test fixtures



Technicians Jim McBride and Charles Collins (left) work with Leo Reed, engineer, to complete new circuit plate test fixture which actually simulates CDO conditions.

Whenever the Production or Inspection Departments need special electrical test equipment, that's when the Test Engineering Department, under the direction of Clayton Holden, Section Head, and his group of engineers and technicians, take over.

A unique and vitally important section of the Production Engineering Department, Test Engineering designs, manufactures, writes test procedures for and maintains all electrical test equipment for testing components and products made by the Telecommunication Division for Stromberg-Carlson customers.

Typical items tested include: telephone instruments, dial switchboard equipment, powerboards, relays, 6K-1 Systems, transmitters and receivers, the XY Universal Switch, PAGEMASTER® selective radio-paging system, carrier equipment and hundreds of components included in telephone equipment.

Whatever the component or equipment, if an electrical test is necessary to insure complete and accurate operation, the Test Engineering Department provides close control over the entire procedure.

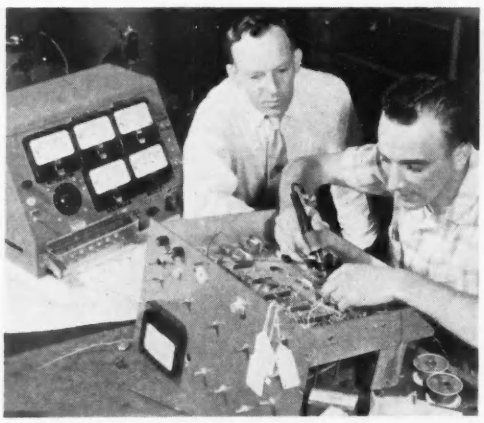
Test fixtures supplied amount to thousands of items, from simple meters to highly complex automatic circuit testers. Commercial equipment is purchased and used wherever its versatility and accuracy can meet Test Engineering requirements.

The manufacture of these instruments for testing precision communications equipment involves severe problems peculiar to testing, since test equipment tolerances must be maintained far within the tight limits of the products to be tested.

Many test fixtures are made one at a time; others in quantities up to ten, so that mass production methods are impractical. A high degree of skill in design and construction is required to ensure interchangeability of parts, ease of service and reproduction in case other similar test fixtures are neded in future plant operations.

Assisting Clayton Holden, head of this miniature plant within a plant, are Olaf Nystrom, Group Head of switchboard equipment, and John Wilson, Group Head of electronic equipment. Both these groups include electrical and electronic design engineers. Robert Winterkorn is Assistant Foreman in charge of fixture manufacturing and maintenance. His group is composed of technicians with skills covering the broad fields of electrical and mechanical manufacturing, instrument maintenance and machine operations.

Scheduled to move soon to more spacious quarters within the main Stromberg-Carlson plant, this important group of men will continue their function amidst improved working conditions adding to the quality and efficiency of products by Stromberg-Carlson.



Felix Broccolo, in photo above, solders another wire to test fixture for PAGEMASTER system as Section Head Clayton Holden looks on. Special equipment for testing carrier terminals (photo to right) is also the responsibility of Test Engineering.

Inspection and testing of transmitters and receivers is completed on complex fixture at left, operated by Thelma Doescher. At right, inspection of relays calls for more than one test fixture of similar design and operation.

Resort hotel in Hot Springs, Virginia Operates telephone system for area

Nestled in a peaceful valley surrounded by the beautiful Alleghany Mountains is Hot Springs, Virginia, which has become a favorite vacation spot for many people from all over the world; one reason is that one of America's most distinguished luxury resorts, The Homestead, is located here.

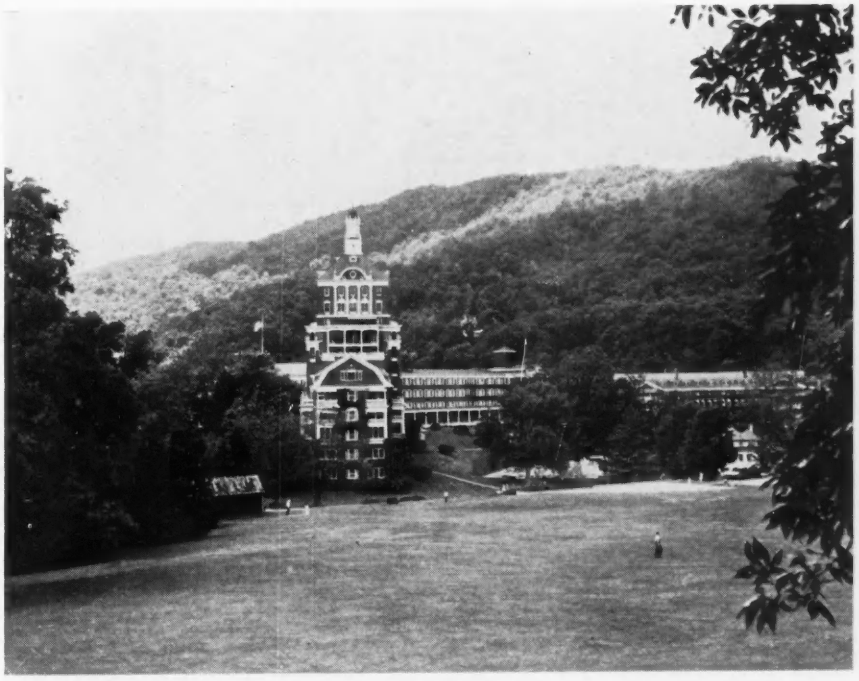
The famous resort operates the telephone system for the hotel as well as for Hot Springs and surrounding communities. The Virginia Hot Springs, Incorporated, owners of The Homestead and the telephone system, is headed by Fay Ingalls, President of Virginia Hot Springs, Incorporated, and Thomas J. Lennon, General Manager of The Homestead.

In March of this year The Homestead converted to a new XY Dial 100-line PBX. The 5-position switchboard acts as an attendant's cabinet and as central office equipment for serving the community. Construction of the new system was under the direction of Homestead's Supervising Engineer Carl J. Wallin. The new board, originally in the main lobby of the hotel, has been moved to a fireproof room under the hotel tower.

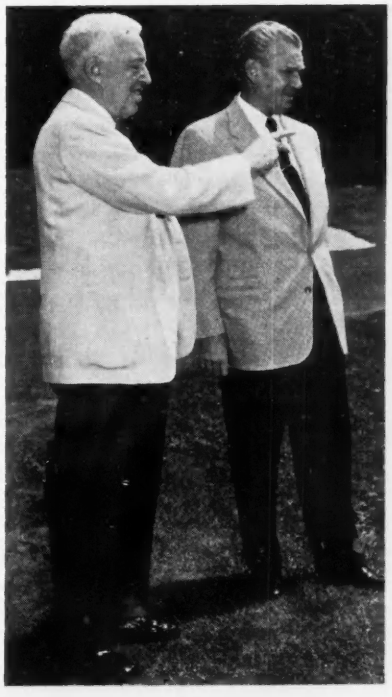
In the new location the operators have a lounge for their convenience as well as an isolated, soundproof and air-conditioned section of the hotel for their work. All important offices in The Homestead, which employs 900 people, are equipped with dial phones, thereby relieving the operators of the necessity of placing all calls.

The Hot Springs area has a population of about 3000, not including the guests in the area vacationing at the various inns and guest houses, and the guests at The Homestead, which frequently number 700.

New equipment has also been installed for long distance circuits from Hot Springs to Covington, Virginia, about twenty miles away.



View of The Homestead, owner and operator of telephone system for Hot Springs, Virginia, and surrounding area.



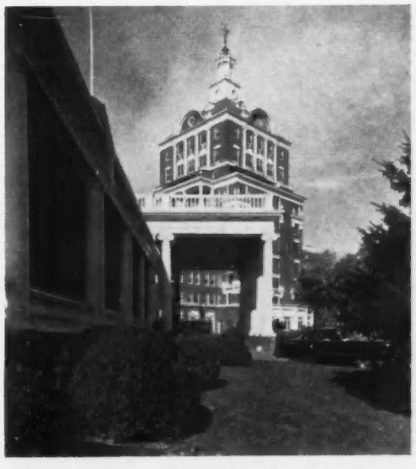
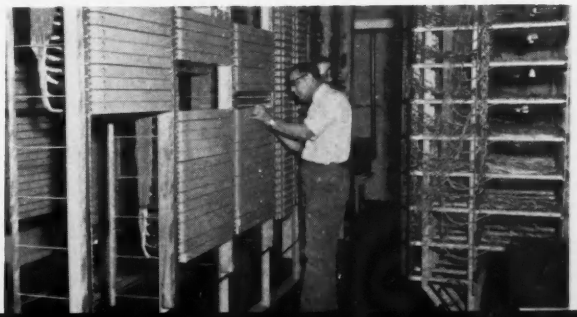


Photo at left: Fay Ingalls, president of Virginia Hot Springs, Incorporated (left) and Thomas J. Lennon, Homestead general manager. At right: The Homestead entrance and tower.

New 5-position switchboard serves entire community. The 100-line PBX is used by the hotel. At lower right: Erbie Conner, maintenance man, is in charge of equipment room.

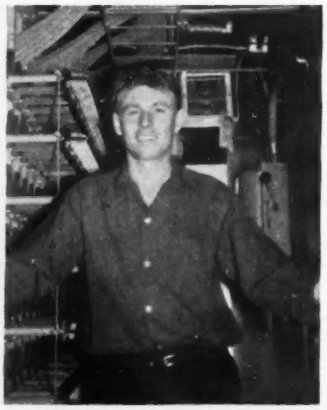


Part 3: Installation Foremen at work and at home

J. Pringle relaxes at home.

Lloyd Camp and daughter Geri Dean, aged 11 months.

Y. V. Bissette's wife, Penny, and their 3-year-old son at home.

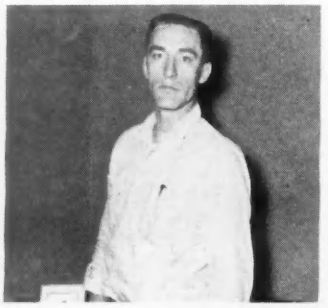


Mr. Bissette is now busy on trailers by Stromberg-Carlson.

E. R. Winslow's installations include Tampa and Sarasota, Fla.

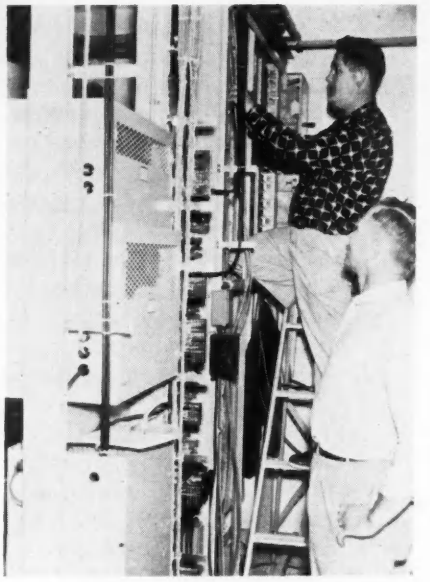
It's been said that installation foremen are where you find them. Most of our readers have found them on the job, cooperating closely with telephone people and delving into the great fund of knowledge necessary in bringing up to date so many of our Independent telephone companies.

Another place where you'll find them is at home, living a normal life with their families and neighbors. It may be in a trailer, a small house or an apartment. But no matter where you find them working, look nearby for their home life — they'll always have it with them.



Clarke B. "Buck" Williams has worked in Jackson and Eustis, Neb.

Shown with George Masak, Stromberg-Carlson Sales Engineer, Mr. Pringle has worked in Irvington, Ky., and Jacksonville and Crossett, Ark.



Lloyd Camp has done jobs in Kingsport, Tenn. and Greenville, O.

Buck Williams family: wife Shirley, Bobbie (center) and Clarke B., Jr.

Sitka, Alaska

Panorama of Sitka, Alaska, with Mt. Edgecumbe in background.

Stromberg-Carlson extends first loan to company outside United States

Six and a half years ago this month the then newly organized Stromberg-Carlson Credit Corp. completed its first loan contract with an Independent telephone company. Since that time, loan agreements have been made to operating companies in 39 states and now, for the first time, to an operating company outside continental United States.

The loan, made to the Sitka (Alaska) Telephone Company, covers the entire reconstruction and rehabilitation of the exchange, including the new building, XY Dial System, cable, construction labor and other previous indebtedness.

Scheduled for cutover in March, 1958, the 800-line, 1000 terminal CDO will serve the 3000 residents of Sitka, with an expected increase of 2000 since a $55 Million pulp mill and a $5 Million hydro plant are now under construction. The exchange will also provide service to a 200-bed hospital operated by the United States Public Health Service.

Once known as the "Paris of the New World" in the late 18th Century, when Alaska was owned by Russia, Sitka, because of its moderate climate, became the capitol of the Americas, the seat of court and social activities outside of the continental limits of Russia.

Today Sitka is a mecca for tourists and known for its other chief industries: fishing and lumbering.

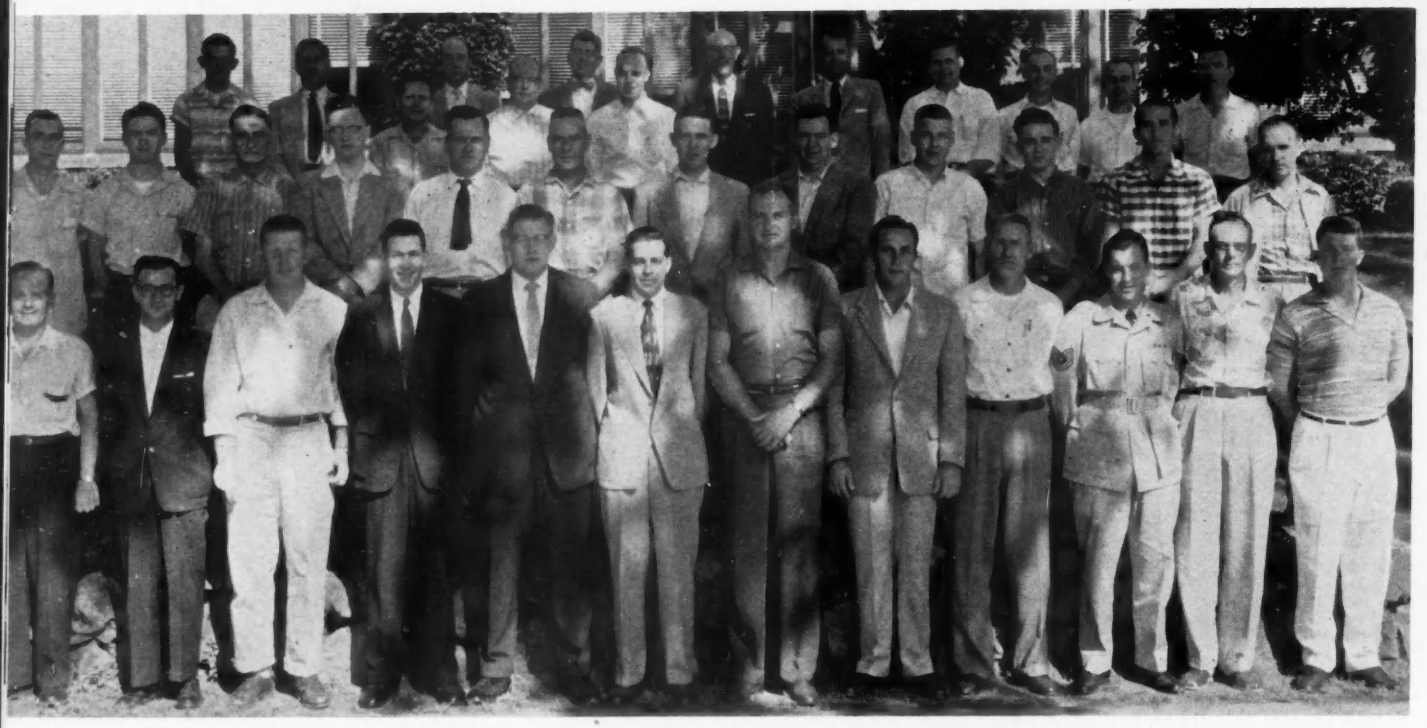
The new dial exchange will be a far cry from the common battery service the company started with some 18 years ago. The owners, John and Martha Cushing and Manager Richard Cushing are quite pleased, not only with the loan itself but with the advantages of dealing with only one agency which has *within itself* the experts qualified to investigate, recommend and carry forward the complete modernization program. Entirely within the normal scope of the Telephone Finance Department's work is legal counseling, engineering, financial and accounting assistance.

Two members of this department primarily concerned with the loan to the Sitka Telephone Company are George Gordon, Assistant Secretary of Stromberg-Carlson, and Warren Schomaker, Assistant Manager of the Credit Corp. Both have personally visited the area.

Stromberg-Carlson is proud that they were asked to help the Sitka Company, so typical of other Independent American telephone companies providing their communities with the best in telephone service.

Above: Mr. Richard Cushing, manager of Sitka Telephone Company. Below: Mr. John Cushing, owner, with his prize catch, an 11-foot Kodiak bear.

XY School: graduates and staff



Graduates and teaching staff in the recent class at the XY Training School in Rochester, New York.

L to R: ROW I

Joseph DiVita, instructor; Mark Myers, Jr., U. S. Gov't. Post Signal, Ft. Meade, Md.; Henry Bell, Hawkinsville Tel. Co., Hawkinsville, Ga.; James Stinnett, U. S. Army Signal Comm. Agency; Thomas Kevra, U. S. Army Signal Comm. Agency; Edwin Bromley, U.S.A.S.C.E.A., Washington, D. C.; Howard Nave, Breezewood Tel. Co., Warfordsburg, Pa.; Michael Padgett, Post SEG, Fort Knox; Edgar Urseth, Paul Bunyan Tel. Coop., Bemidji, Minn.; Wilford Jernigan, USAF Andrews AFB, Washington, D. C.; August Marten, Midwestern Tel. Co., Wright City, Mo.; Ed Creekmore, Calhoun City Tel. Co., Calhoun City, Miss.

ROW II

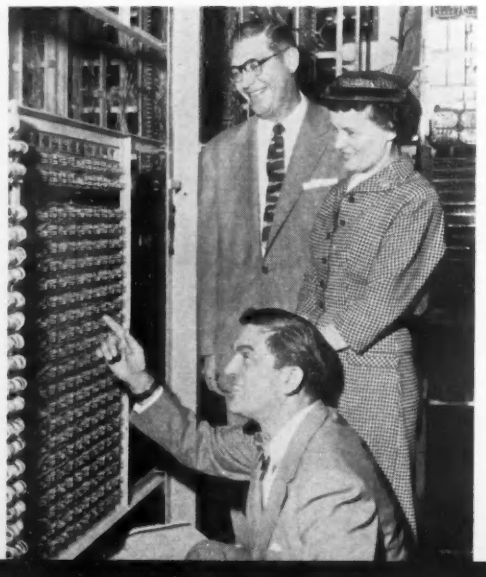
Doyle Beck, National Trail Tel., St. Elmo, Ill.; Thomas Smelser and Guy Smelser, Northeast Texas Tel. Co., Bogata, Texas; Stephen Rowell, S-C Jr. Engineer; Charles Williams, R.C.A. Service Co., Orlando, Fla.; Leonard Hertler, USAF 62nd Comm. Sqdn., Larson AFB, Washington, D. C.; Jo Stravers, Calhoun County Tel. Co., Homer, Mich.; Richard Cushing, Sitka Tel. Co., Sitka Alaska; William Mason, Fort Knox, Ky.; Phillip Carr, Rochester Tel. Co., Inc.; Rochester, Ind.; Darrell Brown, Millry Tel. Co., Millry, Ala.; Lonnie Musgrove, Hommerville Tel. Co., Homerville, Ga.

ROW III

Harlan Brown, Millry Tel. Co., Millry, Ala.; A. R. Aschettino, instructor; Paul Drake, Bolivar Tel. Co., Bolivar, Mo.; Henry Sheve, Mgr., Gov't. Dept.; John Gault, Buffalo Tel. Co., Buffalo, Mo.; John Voss, Vice President, Telecommunication Division; Robert Washburn, S-C Engineering Aide; T. C. Thompson, General Sales Manager, Telecommunication Division; Robert Dobbin, Chief Engineer, Telecommunication Division; Robert Bankes, instructor; Ronald Remily, Sully Buttes Tel. Coop., Highmore, S. D.; Luverne Lowinske, New Ulm Rural Tel. Co., New Ulm, Minn.; Eugene Scheel, instructor.

Howard City, Michigan, converts to XY Dial

Joins Direct Distance Dialing



Albert Spry, foreground, points to new installation as Mrs. Spry and Arthur Boelter, Michigan Bell representative, look on.

The recent conversion to XY Dial and Direct Distance Dialing at the Community Telephone Company has brought a great change in service to Howard City subscribers.

This service is a far cry from the one toll line, started in July, 1898, to today's efficient dial service replacing an outdated magneto system.

Progress is the byword in Howard City as this exchange, under the leadership of Albert Spry, becomes the first independent in Michigan to be wholly converted to DDD.

Stromberg-Carlson
Transmitter
Published by THE TELECOMMUNICATION DIVISION
STROMBERG-CARLSON
A DIVISION OF GENERAL DYNAMICS CORPORATION
Rochester 3, New York
GEORGE B. FORBES, Editor

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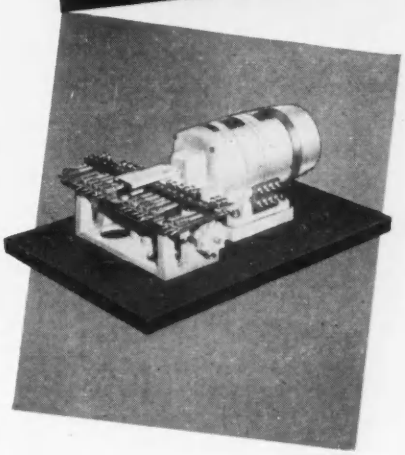

Furnishes positive, unchanging dial and busy tones and provides an accurate interrupter for busy signals and coded ringing. Tones are produced by an Alnico permanent magnet type generator, without the use of brushes and/or commutators. This eliminates the maintenance necessary with apparatus of the tone commutator type.

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☐ Please have representative call on..... (date)

Name.....

Company.....

Street.....

City.....Zone....State.....

THE BACK OF THE BOOK

By JOHN G. REYNOLDS

"Just Lonesome"

FOLKS AROUND a Springfield, Ill. filling station were speculating last month about a most amazing man — "the talker."

A lonely man, he was, hungry for conversation. He walked into Wendling's Station and talked for 24 hours, mostly on the pay telephone to distant cities. He deposited more than $300 in the cash box.

He called Paris. He called Monte Carlo. He called Texas, New York, Wisconsin — Las Vegas, Nev. He talked at length with people in all those places . . .

The telephone company sent out a serviceman to unload the phone cash box about halfway through the 24-hour stint. The man kept sending out for more change. Soon all the business houses in the area were stripped of all their nickels, dimes quarters . . .

"Let's Talk Of Fishing"

LAST MONTH a veteran telephone man suggested to a Chicago Tribune reporter that fishing really makes a contribution to business by providing the business man-fisherman with relaxation and a sort of mental reconditioning that sharpens his approach to business problems.

These thoughts really are those of William V. Kahler, president of Illinois Bell Telephone Co., who tries to turn his attention from telephone lines to fishing lines for a week or so each year . . .

In an interview reported by the "Trib" Mr. Kahler stated he believes in activities which help, temporarily, to separate one's self from regular work responsibilities, and he holds forth fishing as his own favorite means toward that end.

"Of course a lot depends on whom you're with," he said. "Fishing really is association with pleasant company. Catching fish is secondary."

Kahler is remarkably adept at this secondary aspect of fishing. He hauled a 6¼ pound rainbow trout out of Cliff lake, Montana, five or six years ago and has managed to get back there for a few days almost annually since . . .

Kahler has non-telephone interests other than fishing. The time he spends vacationing is modest by any standards and he obviously can't go looking for tarpon every evening after supper. He is reputed to have a green thumb and concedes that "I fool around a little with flowers — but nothing extensive."

However, he has strong feelings about the value of community work as extracurricular activity for the business man — not only for the good it does the community but also for the good it does the man. (In this area he can speak with the authority of one who has held the chairmanship of the Community Fund and numerous other civic posts of note.)

"The fellow who wraps himself up in his own business to the extent that he has no concern for his environment just isn't doing his share," Kahler said. "The executive can't work solely for his corporation; he must work for his community, too . . . You don't begin to be a citizen until you do both."

Pay Phones In The Palace

BRITAIN'S rising cost of living is being felt by Queen and common alike. Queen Elizabeth is disturbed about the telephone bill at the palace which has more than doubled since she came to the throne five years ago.

A raise in telephone rates was announced by the government last month — and the royal telephone bill this year may exceed $70,000.

As an economy measure, the queen has decided not to put through so many costly long-distance calls to her children when she goes on long trips in the future . . .

Also, the queen has had pay telephones installed in Buckingham Palace for the servants so they won't be able to charge private calls to the royal account.

Robbery by Telephone

LAST month a New Yorker tried a new angle — he stuck up a liquor store by telephone. His system was simple: (1) He called up the clerk and said he'd be along in a minute to rob the place and the clerk had better go into the back room; (2) the clerk did; (3) the guy did; (4) he got $107 and the clerk never saw him, just heard the bell ring on the cash register.

We suppose this sets a record for effortless crime and we can't think of any way the guy can make his job easier unless he can make his telephone approach so terrifying that his victims will mail him the money out of their tills. That way he wouldn't have to go outdoors at all.

"Too Many Perezes"

LAST MONTH a subscriber in San Antonio decided too many Perezes were listed in the telephone directory and he told a San Antonio court he wished to change the family name to Westrup.

In support of his request he cited the local telephone directory showing 297 Perezes, and noted that his family was having trouble getting a good credit rating.

Service Deluxe

OUR Far East correspondent has uncovered a fairly new idea. He tells us an enterprising Japanese grocer has worked out his own system for receiving orders from customers who have no telephone service?

How? It's simple — he uses homing pigeons to bring in orders. The pigeons are placed at four outlying points in the area covered by his store.

You can see why linemen prefer

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